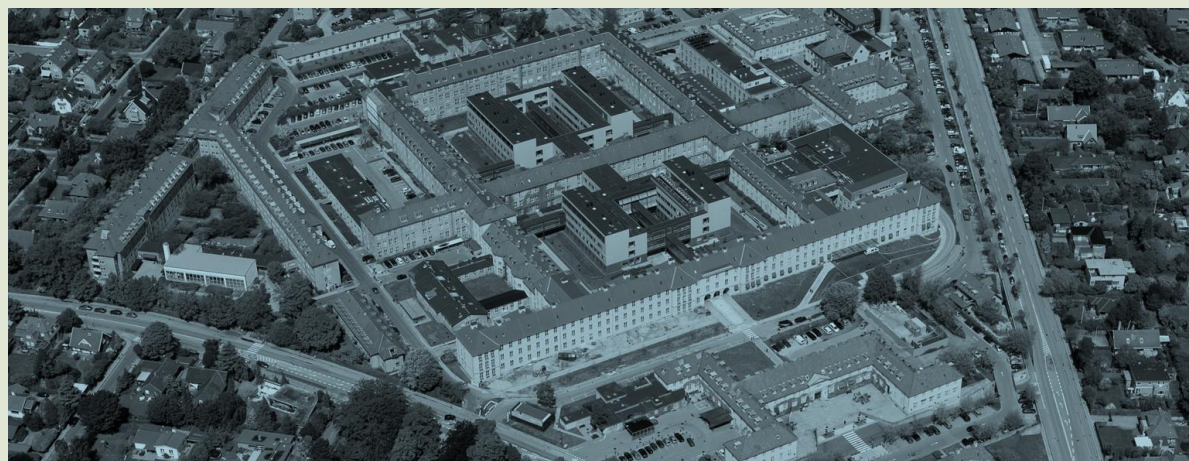


Research Symposium



2022 Abstracts



Research Symposium 2022

Oral presentation

First session chair: Ann Møller

Second session chair: Lone Skov

No.	Name	Department	Abstract title
01	Anton Friis Mariager	Cardiological research department, Herlev Hospital	Prevalence and time of closure of Open Ductus Arteriosus in term born neonates
02	Casper K. Nielsen	Center for Clinical Metabolic Research, Gentofte Hospital,	Ready-to-use dasiglucagon corrects postprandial hypoglycaemia in Roux-en-Y gastric bypass-operated individuals
03	Charlotte Näslund Koch	Department of Dermatology and Allergy	Smoking is an independent but not a causal risk factor for psoriasis: results from a Mendelian randomization study
04	Gustav Gede Nervil	Department of Plastic Surgery, Herlev Hospital	Doctors Diagnostic Accuracy improved by digital patient cases through education mobile application
05	Jonathan Wenstrup	Neurovascular Research Unit, Department of Neurology, Copenhagen University Hospital	Dispatcher Stroke Recognition in Emergency Medical Call Centre and Out-of-Hours Services calls in Copenhagen, Denmark
06	Julie Nyholm Kyvsgaard	1. COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Department of Pediatrics, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark 2. Department of Pediatrics, Slagelse Hospital, Slagelse, Denmark	INFECTION BURDEN MEDIATES RISK FACTORS OF ASTHMA-LIKE SYMPTOMS AND PREDICTS CHILDHOOD ASTHMA
07	Louis Lind Plesner	Department of Radiology, Herlev and Gentofte hospital	Estimating the impact of chest radiograph automation with artificial intelligence
08	Niklas Dyrby Johansen	Department of Cardiology	High-dose versus standard-dose quadrivalent influenza vaccine in older adults: a pragmatic, randomized, active-controlled feasibility trial

Research Symposium 2022

Short electronic presentation

A

Chair: Jesper Johannesen

No.	Name	Department	Abstract title
A1	Alexander Svorre Jordan	Section of Respiratory Medicine, Herlev and Gentofte Hospital, University of Copenhagen, Denmark	PSYCHIATRIC ADVERSE SIDE-EFFECTS OF MONTELUKAST – A NATIONWID COHORT STUDY.
A2	Anna Korsgaard Berg	Pediatric Department, Herlev Hospital and SDCC (Clinical Research)	The Effect of a Skin Care Intervention on Frequencies of Skin Problems in Pediatric Patients Six Months after Initiation of Diabetes Devices
A3	Anna Krøntoft	Department of Allergy and Dermatology, Herlev-Gentofte hospital	Can patient-reported outcome measures be used to predict consultation needs in patients with psoriasis? – A survey study
A4	Anne Wilkens Knudsen*	The Dietitians and Nutritional Research Unit, EATEN	Low-intake Dehydration and Nutrition Impact Symptoms in Older Medical Patients
A5	Annina Kurzay	CCIT, University of Copenhagen, T-OP network	Therapeutic potential of MERTK signaling in CD4 T cells for cancer therapy
A6	Arianna Draghi	National Center for Cancer Immune Therapy (CCIT-DK), Department of Oncology, Copenhagen University Hospital, Herlev, Denmark	Uncoupling CD4+ TIL-mediated tumor killing from JAK-signaling
A7	Astrid Johansen	National Center for Cancer Immune Therapy, Department of Oncology	Plasma YKL-40 is associated with prognosis in patients with metastatic pancreatic cancer receiving immune checkpoint inhibitors in combination with radiotherapy
A8	Benjamin Nilsson Wadström	Department of Clinical Biochemistry, Herlev and Gentofte Hospital	Remnant cholesterol and inflammation explain excess risk of ASCVD in diabetes: the Copenhagen General Population Study
A9	Caroline Hartwell Garred	Department of Cardiology, Herlev and Gentofte Hospital	Adherence and Discontinuation of Optimal Heart Failure Therapies According to Age - A Danish Nationwide Study
A10	Cecilie Ølvang Madsen	National Center for Cancer Immune Therapy, Oncology Department	Peripheral immune signature of responsiveness to TIL therapy using high dimensional single cell analysis
A11	Christian Rønn	Section of Respiratory Medicine, Department of Medicine, Copenhagen University Hospital - Herlev Gentofte Hospital, Hellerup, Denmark	Chronic Obstructive Pulmonary Disease and pneumonia hospitalisation: Association with dose of inhaled corticosteroids.
A12	Christopher Aled Chamberlain	National Center for Cancer Immune Therapy, Department of Oncology	A pan-cancer signature identifies tumour-reacting CD8+ TILs and reveals their functional heterogeneity
A13	David Horner	COPSAC, Afdeling for Børn og Unge	A Maternal Western Dietary Pattern during Pregnancy is associated with Neurodevelopmental Disorders in 10-year-old Children
A14	Deewa Zahir Anjum	Department of cardiology, Copenhagen University Hospital Gentofte	Temporal trends in initiation of mineralocorticoid receptor antagonists and risk of subsequent withdrawal in patients with heart failure: a nationwide study in Denmark from 2003–2017 (2 of 2)
A15	Felix Müller	Department of Radiology, Herlev and Gentofte Hospital	Dual-Energy CT in Suspected Scaphoid Fractures: Evaluation of the Clinical Implementation

*' participates outside the competition

Research Symposium 2022

Short electronic presentation

B

Chair: Carsten Bogh Juhl

No.	Name	Department	Abstract title
B16	Frederikke Rosenvinge Skov	Copenhagen Prospective Studies on Asthma in Childhood (COPSAC)	Type 2-high airway inflammation in childhood asthma distinguishes a more severe phenotype
B17	Gitte Holmen Olofsson*	National Center for Cancer Immune Therapy (DK-CCIT)	Aiming high in HI-AIM; A clinical testing of exercise in cancer
B18	Heidi Shil Eddelien	Neurology, Herlev Hospital. Clinical Medicine, University of Copenhagen	Implementing an Acute Stroke Care Bundle initiated by Specialized Stroke Unit Nurses in the Emergency Department to Reduce Mortality.
B19	Jakob Boesgaard Norsk	Department of Cardiology S103	Yield of echocardiographic screening of first-degree relatives of children with bicuspid aortic valve (1 of 2)
B20	Jonas Henrik Kristensen	Kardiologisk afdeling og Akutmodtagelsen	Estimating the true half-life of cardiac troponin I – a novel methodological approach
B21	Julie B.K. Sølberg	The National Allergy Research Centre, Department of Dermatology and Allergy, Copenhagen University Hospital Herlev-Gentofte, Hellerup, Denmark	The proteome of hand eczema assessed by tape stripping
B22	Kristina Aagaard	Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Gentofte, Denmark	High-dose vitamin D supplementation in pregnancy and risk of autism spectrum and attention deficit hyperactivity disorder at age 10 - A randomized clinical trial
B23	Lina M Åström	Department of Oncology	Online adaptive radiotherapy of anal cancer: normal tissue sparing, target propagation methods, and first clinical experience
B24	Louisa Bønløkke Nervil	Department of plastic surgery, Herlev Hospital	Correlation between basic training in visual skin cancer diagnostics and the effect on pathologists' assessment of melanocytic skin lesions - Results from a pilot of a controlled randomized study
B25	Louise Tønnesen*	Section of Respiratory Medicine, Copenhagen University Hospital, Herlev-Gentofte, Denmark	The impact of social distancing in 2020 on admission rates for exacerbations in asthma; a nationwide cohort study.
B26	Madeline Kvist	Department of Gastrointestinal- and Hepatic diseases.	Abdominal Subcutaneous Obesity and the Risk of Burst Abdomen: a matched case-control study (1 of 2)
B27	Magdalena Hansson	Department of Cardiology, Herlev, Denmark	Maternal pre-existing and gestational diabetes, and the prevalence of septal defects in the offspring
B28	Malene Hammer Hansen	Department of Cardiology, Herlev-Gentofte Hospital	Driving restrictions following implantation of an implantable cardioverter defibrillator (ICD) alter the recipients' ability to maintain employment and daily living
B29	Marie Louise Jensen	Ortopædkirurgisk Afdeling, GE	Previous rotator cuff repair increases the risk of revision surgery for periprosthetic joint infection after reverse shoulder arthroplasty
B30	Marie-Louise Thorseth	National Center for Cancer Immune Therapy, Department of Oncology	Knockout of Collagen Type I Impedes Tumor Growth and Supports Immune Cell Infiltration in a Murine Model of Pancreatic Cancer

*' participates outside the competition

Research Symposium 2022

Short electronic presentation

C

Chair: Barbara Juliane Holzknecht

No.	Name	Department	Abstract title
C31	Mario Presti	National Center for Cancer Immune Therapy, Oncology Department	Acquired resistance to immune checkpoint inhibitors via progressive T-cell immune escape
C32	Mathias Elsner Melgaard	COPSAC, Herlev Børne- og Ungeafdeling E	Virus-specific Airway Immune Response in Early Life is Associated with Childhood Asthma
C33	Mette Marie Olsen Nørregaard	Kardiologisk forskningsenhed 2, Herlev Hospital	Impact of Maternal Risk Factors on the Structure and Function of the Heart in Newborns
C34	Mia Østergaard Johansen	Department of Clinical Biochemistry, Herlev and Gentofte Hospital	From plasma triglycerides to triglyceride metabolism in mortality: the Copenhagen General Population Study
C35	Mie Liljendahl	Department of Dermatology and Allergy, Herlev and Gentofte Hospital	Development and internal validation of a diagnostic prediction model for psoriasis severity
C36	Mikkel Byrdal	Research Assistant at Center for Cancer Immune Therapy, Herlev Hosp.	Therapeutic targeting of cellular components of the Tumor Microenvironment as a treatment strategy in cancer
C37	Monika Rubin	Department of Anaesthesiology and Herlev ACES	A survey of healthcare professionals' perspectives regarding family presence during resuscitation in Denmark (1 of 3)
C38	Morten Jon Andersen	Department of Orthopedic Surgery - Herlev and Gentofte	Is MRI without sedation or anesthesia feasible in children with fractures around the elbow?
C39	Nanna Marie Christoffersen	Department of Obstetrics and Gynecology, Herlev and Gentofte University Hospital + Faculty of Health and Medical Sciences, Copenhagen University	Increased risk of stress-urinary-incontinence surgery after hysterectomy – a population-based cohort study
C40	Nicklas Juel Spindler	Dept. of Oncology, Radiotherapy Unit	Early toxicity after stereotactic ablative radiotherapy of oligometastatic bone metastases in the BONY M phase II trial
C41	Niklas Lorentsson	Department of Medicine, Unit of Infectious Diseases, Copenhagen University Hospital, Herlev-Gentofte Hospital, Hellerup, Denmark. Steno Diabetes Centre Copenhagen, Gentofte, Denmark, Center for Clinical Metabolic Research, Herlev-Gentofte Hospital	The impact of a glucose load on the IFN- γ -release test for latent tuberculosis – a preliminary analysis
C42	Nils Hoyer*	Department of Respiratory Medicine	Diagnostic delay in IPF impacts progression-free survival, quality of life and hospitalisation rates
C43	Nina Strandkjær	S104, kardiologisk forskningsenhed 2, Herlev Hospital	A randomized clinical trial of population and sex-specific troponin cutoffs for ruling out acute myocardial infarction - The Danish Study of Sex and Population-specific Cutoffs of Troponin (DANSPOP)
C44	Pernille B. Nielsen	Dept. of Emergency Medicine & Dept of Cardiology, Herlev Hospital	Clinical assessment as a part of an early warning score—a Danish cluster-randomised, multicentre study of an Individual Early Warning Score (I-EWS) – publiceret Maj 2022, I the Lancet Digital health (1 of 3)
C45	Peter Kamstrup	Section of Respiratory Medicine, Department of Medicine, Copenhagen University Hospital-Herlev and Gentofte	Biomarkers of Clot Activation and Degradation, and Risk of Future Major Cardiovascular Events in Acute Exacerbation of COPD: A Cohort Sub-Study in a Randomized Trial Population
C46	Pia Aehnlich	National Center for Cancer Immune Therapy, Department of Oncology	V γ 9V δ 2 T cell metabolism – key to a successful new adoptive cell therapy for cancer?

Research Symposium 2022

Short electronic presentation

D

Chair: Lisbet Hølmich

No.	Name	Department	Abstract title
D47	Rasmus Bo Hasselbalch	Department of emergency medicine	The impact of age on cardiac troponin
D48	Rikke Bjersand Sunde	COPSAC/Herlev og Gentofte Hospital	Endotyping Childhood Asthma by Bacterial Airway Colonization in Neonates
D49	Sara Fresnillo Saló	Department of Oncology, National Center for Cancer Immune Therapy	Characterization of CD4+ T cell responses against Rho C, a metastasis associated tumor antigen
D50	Sidsel Christy Lindgaard	Dept. of Oncology	Prognostic value of circulating proteins in patients undergoing surgery for pancreatic cancer
D51	Signe Eekholm	Forskningsenheden for Klinisk Sygepleje	Implementation of evidence-based nursing care for hospital patients with Community Acquired Pneumonia; Design, development, and evaluation of an implementation strategy
D52	Signe Stelling Risom*	Department of cardiology, Herlev and Gentofte University Hospital	A Systematic Literature Review of the Effect of Mind-Body Interventions on Mental Health Among Patients with Atrial Fibrillation.
D53	Simone Møller Hansen	The Dietitians and Nutritional Research Unit, EATEN, HGH	Nutritional gap when transferring from the ICU to general wards – a retrospective study
D54	Siri Henriksen	Centre for Perioperative Optimisation, Department of Surgery, Herlev Hospital	Varying negative appendectomy rate after laparoscopic appendectomy – a systematic review and meta-analysis (1 of 3)
D55	Sofie Bay Simony	Department of Clinical Biochemistry, Herlev and Gentofte Hospital	Statin use and reduced STEMI relative to non-STEMI: a nationwide study in Denmark
D56	Sofie Dannesbo	Department of Cardiology, Herlev Hospital	Patency of neonatally identified interatrial communications in young children
D57	Susanne Boel	Department of Physiotherapy and Occupational Therapy	The predictiv value of disability at 2 weeks after surgery of distal radius fractures: a prospective cohort study (1 of 2)
D58	Søren Perregaard	Department of orthopaedic surgery, hand surgical department, Gentofte Hospital Copenhagen, Denmark.	Complications after volar locking plate fixation of distal radius fractures
D59	Thilde Olivia Kock	Kardiologisk afdeling S	Left ventricular non-compaction in childhood: echocardiographic follow-up and prevalence in first-degree relatives
D60	Thomas Helbo	Department of Clinical Microbiology, Herlev and Gentofte Hospital	Carriage of methicillin-resistant Staphylococcus aureus (MRSA) in children <6 years old: A retrospective cohort study of the natural course and effectiveness of decolonisation treatment
D61	Thomas Hulen	National Center for Cancer Immune Therapy (CCIT-DK)	Identifying Dark Antigen-Reactivity in Tumor-Infiltrating Lymphocytes from Patients with Metastatic Melanoma
D62	Thy Viet Luu	DK-CCIT, Department of Oncology, Herlev Hospital	Impact of adrenaline on immune cell function: where exercise meets cancer immunotherapy

A1 Alexander Svorre Jordan

Abstract title	PSYCHIATRIC ADVERSE SIDE-EFFECTS OF MONTELUKAST – A NATIONWID COHORT STUDY.
Presenter	Alexander Svorre Jordan
Title	Medical student
If PhD, year of defence	no
Affiliation	Section of Respiratory Medicine, Herlev and Gentofte Hospital, University of Copenhagen, Denmark
E-mail	alexander.svorre.jordan@regionh.dk
Authors and affiliations	Alexander Svorre Jordan¹, Louise Lindhardt Toennesen^{1,2}, Josefin Eklof ¹, Pradeesh Sivapalan^{1,3}, Howraman Meteran^{1,2}, Klaus Bønnelykke⁴, Charlotte Suppli Ulrik², Jens-Ulrik Stæhr Jensen¹ ¹Section of Respiratory Medicine, Herlev and Gentofte Hospital, University of Copenhagen, Denmark ²Department of Respiratory Medicine, Hvidovre Hospital, University of Copenhagen, Denmark ³Department of Respiratory Medicine, Zealand Hospital, Roskilde, University of Copenhagen, Denmark ⁴ Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital,

Abstract text – limited to 250 words

Introduction: Montelukast, a selective leukotriene receptor antagonist, is used as an add-on option in patients with asthma not well controlled on inhaled corticosteroids (ICS) and long-acting beta2 agonists (LABA). Evidence suggests that montelukast can have neuropsychiatric adverse side-effects, however findings are conflicting.

Objective: To assess if montelukast exposure in asthmatic adults is associated with neuropsychiatric adverse side effects using data from the Danish nationwide health registers.

Methods: Individuals with either >1 redemption of asthma medicine or with at least one out-patient hospital contact with asthma as the main diagnosis from January 1, 2011 to December 31, 2018, were included. Montelukast exposure was assessed as a time-dependent variable. The outcomes of interest were use of neuropsychiatric medicine and hospital contacts with a neuropsychiatric diagnose.

Results: Of the 180,305 patients with asthma in the final cohort, 13.0% had been exposed to montelukast during the follow up period. Exposure to montelukast was significantly associated with use of neuropsychiatric medicine (HR (95% CI) = 1.14 (1.08-1.20), $p < 0.0001$), with the highest risk found in the youngest age-groups. Exposure to montelukast was not associated with hospital contacts with a neuropsychiatric diagnosis (HR (95% CI) = 1.04 (0.96-1.13), $p = 0.30$), however, age-stratified analyses showed an increased risk following montelukast exposure in the youngest age-groups ((HR (95% CI) in age group 18–29: 1.28 (1.11-1.47), $p < 0.001$). The risk associated with montelukast exposure was not increased among individuals with an existing neuropsychiatric condition.

Conclusion: Asthma patients aged +18 years prescribed montelukast had increased risk of neuropsychiatric events, compared with those on other asthma maintenance medications. Clinicians should be aware of the potential risks of montelukast in their prescribing practices.

A2 Anna Korsgaard Berg

Abstract title	The Effect of a Skin Care Intervention on Frequencies of Skin Problems in Pediatric Patients Six Months after Initiation of Diabetes Devices
Presenter	Anna Korsgaard Berg
Title	MD, PhD-student
If PhD, year of defence	
Affiliation	Pediatric Department, Herlev Hospital and SDCC (Clinical Research)
E-mail	anna.korsgaard.berg.02@regionh.dk
Authors and affiliations	Anna Korsgaard Berg ^{1,2} , Jacob Pontoppidan Thyssen ³ , Annemarie Cecilie Grauslund ² , Fiona Sørensen ^{1,2} , Steffen Ullitz Thorsen ² , Claus Zachariae ⁴ and Jannet Svensson ^{1,2} 1: Pediatric Department, Herlev Hospital 2: Clinical Research, Steno Diabetes Center Copenhagen, 3: Department of Dermatology and Venerology, Bispebjerg Hospital, 4: Department of Dermatology and Venerology, Gentofte Hospital

Abstract text – limited to 250 words

Background and aim: Pediatric patients with type 1 diabetes are increasingly using devices to treat their disease. Unfortunately, many evolve skin problems, and especially eczema due to contact with these devices. This study investigated the effect of skin care in preventing skin problems in pediatric patients due to contact with diabetes devices.

Methods: A cluster-controlled interventional study of 148 pediatric patients was done after initiation of a diabetes device. The intervention consisted of information on proper skin care as well as delivery of a 70%-lipid lotion for daily use. Patients were seen every third month. Data on skin problems due to devices were obtained by visual inspection as well as interview. Chi-squared and Fischer Exact test were used as statistics.

Results: After six months, 34% and 39% of the patients in intervention and control group, respectively, had self-reported skin problems since last visit. Visible skin reactions recognized by trained personnel were seen in 37% of pump patients and 19% of sensor patients at six months. No significant differences were found among both self-reported and visible skin reactions in the intention-to-treat analysis but revealed tendencies towards protective effect of intervention.

Conclusion: After six months of device use, more than 30% of 119 participants described skin reactions and most of the reactions were seen in pump patients. After six months, the skin care intervention does not significantly prevent skin problems overall, but longer follow-up is needed.

A3 Anna Krontoft

Abstract title	Can patient-reported outcome measures be used to predict consultation needs in patients with psoriasis? – A survey study
Presenter	Anna Krontoft
Title	
If PhD, year of defence	
Affiliation	Departement of Allergy and Dermatology, Herlev-Gentofte hospital
E-mail	anna.sophie.belling.krontoft@regionh.dk
Authors and affiliations	Anna Sophie Belling Krontoft RN, MNSc1, Johanna Walsøe Jensen RN1, Mette Charlotte Pedersen RN1, Maria Pors RN1, Diljit Kaur Knudsen MD, PhD1, Claus Zachariae MD, DMSc 1 and Lone Skov MD, DMSc1 1) Department of Dermatology and Allergy, Herlev and Gentofte Hospital, University of Copenhagen, Hellerup, Denmark.

Abstract text – limited to 250 words

Background: Patient-reported outcome measures (PROMs) are emerging tools used to capture a patient's daily health status and enhance communication between patients and healthcare professionals. This study examined whether PROMs can be used to predict consultation needs in an outpatient clinic setting including patients diagnosed with psoriasis.

Method: We evaluated a nationally developed set of PROMs for psoriasis patients, which included a standard set of questionnaires that capture patients' perceptions of their experience and quality of life. Patients (n = 187) answered the psoriasis PROMs prior to an in-person consultation. Their responses were evaluated alongside patient, doctor, and nurse opinions on whether the subsequent consultation was necessary. Additionally, comments about the consultations from the patient, doctor, and nurse were collected and provided insights as to why certain consultations were deemed necessary.

Results: Comparing the patient, doctor, and nurse responses addressing a need for consultation compared to the coded psoriasis PROMs results (red or green/yellow outcome), 23% of the patients with a green/yellow outcome were in need of a doctor's consultation. Upon considering a subset of psoriasis PROMs questionnaires that reflect subjective responses (e.g., DLQI, PEST, MDI-2, and side effects), the proportion of patients that yielded a green/yellow outcome and were identified to require a doctor consultation increased to approximately 45%.

Conclusions: The preliminary results show that the psoriasis PROMs were supportive in the consultation but alone cannot sufficiently guide healthcare professionals to determine whether in-person consultations are required.

A4 Anne Wilkens Knudsen

Abstract title	Low-intake Dehydration and Nutrition Impact Symptoms in Older Medical Patients
Presenter	Anne Wilkens Knudsen
Title	Researcher, RN, RD, PhD
If PhD, year of defence	2016
Affiliation	The Dietitians and Nutritional Research Unit, EATEN
E-mail	anne.wilkens.knudsen.01@regionh.dk
Authors and affiliations	Jacob Bækgaard Jespersen ¹ , Anne Marie Beck ¹ , Helena Osbæk Jensen ¹ , Tina Munk ¹ , Anne Wilkens Knudsen ¹ ¹ The Dietitians and Nutritional Research Unit, EATEN, Copenhagen University Hospital - Herlev and Gentofte, Copenhagen, Denmark

Abstract text – limited to 250 words

Introduction:

Malnutrition and low-intake dehydration both increase complications and mortality in hospitalized older medical patients. Nutrition Impact Symptoms (NIS) are barriers for obtaining an adequate nutritional intake and possibly adequate fluid. Therefore, we aimed to assess the prevalence of low-intake dehydration and NIS, and the relation between low-intake dehydration and NIS.

Methods:

A retrospective cohort study among older patients (≥ 65 years) from the Medical Department at Herlev-Gentofte Hospital and referred to a clinical dietitian. Sex, age, BMI, prevalence of nutritional risk (NRS-2002), low-intake dehydration (≥ 295 mOsm/L, $\text{osmolality} = 1.86 \times (\text{Na}^+ + \text{K}^+) + 1.15 \times \text{glucose} + \text{urea} + 14$), and NIS (the EATEN-questionnaire, comprising 16 NIS-questions and whether these were respectively present and limiting nutritional intake) were collected.

Results:

We included 99 patients (60% women), mean age 81 years (± 7.9), median BMI 21.8 kg/m² (IQR: 19.5-25.4). Nutritional risk was found in 74%, and low-intake dehydration in 40% of the included patients. The three most frequent NIS-present were: Early satiety (84%), no appetite (82%), and tiredness (72%). The three most frequent NIS-limiting intake were: No appetite (73%), early satiety (69%), and dry mouth (42%). We found low-intake dehydration to be related to a lower prevalence of the following NIS-present; dry mouth (58% vs. 80%, $p=0.0210$), and breathlessness (24% vs. 49%, $p=0.0179$). Among the NIS-limiting intake a lower prevalence of other pains was related to low-intake dehydration (7% vs. 29%, $p=0.0233$).

Conclusion:

NIS and low-intake dehydration are frequent in older patients. NIS-present is inversely related with dry mouth and breathlessness. NIS-limiting intake is inversely related with other pains.

A5 Annina Kurzay

Abstract title	Therapeutic potential of MERTK signaling in CD4 T cells for cancer therapy
Presenter	Annina Kurzay
Title	M.Sc.
If PhD, year of defence	
Affiliation	CCIT, University of Copenhagen, T-OP network
E-mail	annina.kurzay@regionh.dk
Authors and affiliations	Annina Kurzay, Marlies Peeters, Per thor Straten

Abstract text – limited to 250 words

Cancer immunotherapy aims to initiate and support anti-tumour immune responses by improving the activity and priming of cytotoxic T cells. Approaches preferably target CD8 T cells as they detect intracellular antigens presented by tumour cells and readily eradicate them. Recent findings underline the importance of CD4 T cell help for sustained responses and demonstrate equal, if not superior killing capacity. MERTK, a member of the TAM receptor tyrosine kinase family (TYRO3, AXL and MERTK), has been known as an oncogenic driver and inhibitor of inflammatory responses. However, on CD8 T cells MERTK acts co-stimulatory when activated by its ligand PROS1.

This project aims to understand and improve CD4 T cell help by investigating the PROS1-MERTK axis. We examined the effects of PROS1 stimulation on human naïve CD4 T cells co-stimulation by proliferation assays. We addressed IFN- γ / IL-4 cytokine secretion by ELISA as well as T cell memory formation by flow cytometric staining of CCR7 and CD45RO. Finally, we polarised naïve CD4 T cells into Th1/Th2 subsets and addressed helper subset polarisation looking at Tbet/Gata3 mRNA and protein levels.

We show that MERTK was expressed selectively on central memory T cells, suggesting a role in 'long-lasting' memory formation. In addition, it was expressed to a significantly higher extend on Th1 T helper cells, which identify and eradicate cancer cells. PROS1 stimulation moreover increased IFN- γ secretion, ultimately presenting the PROS1-MERTK pathway as a potential target to boost CD4 T cell help and performance in future immunotherapies.

A6 Arianna Draghi

Abstract title	Uncoupling CD4+ TIL-mediated tumor killing from JAK-signaling
Presenter	Arianna Draghi
Title	MD, PhD Student
If PhD, year of defence	/
Affiliation	National Center for Cancer Immune Therapy (CCIT-DK), Department of Oncology, Copenhagen University Hospital, Herlev, Denmark
E-mail	arianna.draghi.01@regionh.dk
Authors and affiliations	Authors: Arianna Draghi ¹ , Mario Presti ¹ , Agnete Witness Praest Jensen ¹ , Christopher Aled Chamberlain ¹ , Benedetta Albieri ¹ , Anne-Christine Kiel Rasmussen ¹ , Mads Hald Andersen ¹ , Michael Douglas Crowther ¹ , Inge Marie Svane ¹ , Marco Donia ¹ Affiliations: 1 National Center for Cancer Immune Therapy (CCIT-DK), Department of Oncology, Copenhagen University Hospital, Herlev, 2730, Denmark

Abstract text – limited to 250 words

Introduction: Impaired MHCII-presentation and insensitivity to immune effector molecules are common features of immunotherapy-resistant tumors and can be respectively associated with loss of $\beta 2$ microglobulin (B2M) or impaired IFN γ -signaling.

Methods: To determine the role of cytotoxic CD4+ tumor-infiltrating lymphocytes (TILs) in immunotherapy-resistant tumors, we investigated CD4+ TIL-mediated cytotoxicity in melanomas harboring common resistance mechanisms.

Results: CD4+ TIL-mediated cytotoxicity was not affected by B2M loss but was dependent on the expression of CIITA. Melanomas with constitutive expression of MHCII (MHCIIconst+) were killed by tumor-specific CD4+ TILs even in the absence of IFN γ -mediated MHCII upregulation, whereas IFN γ was necessary for CD4+ TIL-mediated cytotoxicity against MHCIIconst- melanomas. Notably, while tumor-specific CD4+ TILs did not kill JAK1KO MHCIIconst- melanomas even post IFN γ stimulation, sensitivity to CD4+ TIL-mediated cytotoxicity was maintained by JAK1KO MHCIIconst+ melanomas.

Conclusion: In conclusion, our data indicate that tumor-specific CD4+ TIL responses could help overcome resistance to immunotherapy mediated by IFN γ -signaling loss in MHCIIconst+ melanomas.

A7 Astrid Johansen

Abstract title	Plasma YKL-40 is associated with prognosis in patients with metastatic pancreatic cancer receiving immune checkpoint inhibitors in combination with radiotherapy
Presenter	Astrid Zedlitz Johansen
Title	MSc, PhD stud
If PhD, year of defence	PhD Defense on August 29 th 2022
Affiliation	National Center for Cancer Immune Therapy, Department of Oncology
E-mail	astrid.zedlitz.johansen@regionh.dk
Authors and affiliations	AZ Johansen ¹ , SI Novitski ² , JX Hjaltelin ² , S Theile ³ , MK Boisen ³ , S Brunak ² , DH Madsen ¹ , DL. Nielsen ³ , IM Chen ³ . 1) National Center for Cancer Immune Therapy, Copenhagen University Hospital – Herlev and Gentofte, Herlev. 2) Novo Nordisk Foundation Center for Protein Research, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen. 3) Department of Oncology, Copenhagen University Hospital – Herlev and Gentofte, Herlev.

Abstract text – limited to 250 words

Introduction: YKL-40 is a secreted glycoprotein that has been shown to inhibit the cytotoxic function of T and NK lymphocytes, and in vivo studies have demonstrated synergistic anti-cancer effects of blocking YKL-40 in combination with immune checkpoint inhibitors (ICIs). Biomarkers for the prediction of the response to ICIs are highly needed. We investigated the association between plasma YKL-40 levels clinical benefit and survival in patients with metastatic pancreatic cancer (mPC) receiving ICIs combined with stereotactic body radiotherapy (SBRT).

Methods: Blood samples were collected at baseline, after 2 weeks, and then every 8 weeks until disease progression from 84 patients with mPC who participated in the randomized phase II CheckPAC study, in which patients received nivolumab ± ipilimumab combined with a single fraction of SBRT (15 Gy). Plasma YKL-40 was measured using a commercial ELISA kit.

Results: Median YKL-40 was higher after 8 weeks in patients with progressive disease than in patients with clinical benefit, defined as stable disease, partial or complete response ($p < 0.05$). Elevated baseline YKL-40 was an independent predictor of shorter overall survival (OS) (HR 2.06, 95% CI 1.15–3.7). A $\geq 40\%$ decrease in YKL-40 was associated with longer OS ($p = 0.0025$) compared to stable and $> 40\%$ increasing YKL-40. There was no correlation between YKL-40 and the tumor burden marker CA19-9.

Conclusion: This study contributes new knowledge regarding plasma YKL-40 as a predictor of clinical benefit from ICIs combined with SBRT. These exploratory results warrant further investigation of YKL-40 as a cancer biomarker.

A8 Benjamin Nilsson Wadström

Abstract title	Remnant cholesterol and inflammation explain excess risk of ASCVD in diabetes: the Copenhagen General Population Study
Presenter	Benjamin Nilsson Wadström
Title	MD
If PhD, year of defence	
Affiliation	Department of Clinical Biochemistry, Herlev and Gentofte Hospital
E-mail	karl.benjamin.walter.nilsson.wadstroem@regionh.dk
Authors and affiliations	Benjamin N. Wadström, MD Kasper M. Pedersen, MD, Anders B. Wulff PhD, Børge G. Nordestgaard, DMSc Department of Clinical Biochemistry, Herlev and Gentofte Hospital

Abstract text – limited to 250 words

Introduction: Elevated remnant cholesterol is causally associated with increased risk of atherosclerotic cardiovascular disease (ASCVD) in the general population. In individuals with diabetes, remnant cholesterol is often elevated; we tested the hypothesis that excess risk of peripheral artery disease, myocardial infarction, ischaemic stroke, and ASCVD in diabetes is explained by remnant cholesterol and other known cardiovascular risk factors.

Methods: We studied 4,569 individuals with diabetes from the Copenhagen General Population Study (2003-2015). During up to 15 years of follow-up, 236 were diagnosed with peripheral artery disease, 234 with myocardial infarction, 226 with ischaemic stroke, and 498 with any ASCVD in the national Danish Patient Registry. Remnant cholesterol was calculated from a standard lipid-profile.

Results: Multivariable adjusted hazard ratio (95% confidence interval) for peripheral artery disease per doubling of remnant cholesterol was 1.8 (1.2-2.5), and per doubling of LDL cholesterol 0.8 (0.5-1.3). Corresponding estimates were 1.8 (1.3-2.6) and 1.0 (0.6-1.6) for myocardial infarction, 1.6 (1.1-2.3) and 1.1 (0.7-1.8) for ischaemic stroke, and 1.7 (1.4-2.2) and 0.8 (0.6-1.1) for any ASCVD, respectively. Remnant cholesterol explained 24%, low-grade inflammation 18%, and pulse pressure 7% of excess risk of any ASCVD in diabetes, while LDL cholesterol and systolic blood pressure did not explain excess risk.

Conclusion: A doubling of remnant cholesterol was associated with 1.7-fold higher risk of ASCVD in diabetes. Remnant cholesterol and low-grade inflammation can explain considerable excess risk of ASCVD in diabetes. Clinical trials should determine whether excess risk can be decreased by lowering remnant cholesterol and inflammation.

A9 Caroline Hartwell Garred

Abstract title	Adherence and Discontinuation of Optimal Heart Failure Therapies According to Age - A Danish Nationwide Study
Presenter	Caroline Hartwell Garred
Title	Medical Student
If PhD, year of defence	
Affiliation	Department of Cardiology, Herlev and Gentofte Hospital
E-mail	carogarred@gmail.com / caroline.amalie.hartwell.garred.01@regionh.dk
Authors and affiliations	1Caroline H. Garred, 1Deewa Zahir, 2Jawad H. Butt, 1Pauline B. Ravn, 1Jonas Bruhn, 1Gunnar H. Gislason, 2Emil L. Fosbøl, 3Christian Torp-Pedersen, 4Mark C. Petrie, 4John J. V. McMurray, 2Lars Køber, MD, 1Morten Schou, 1Herlev and Gentofte Hospital, Copenhagen, Denmark, 2Rigshospitalet, Copenhagen, Denmark, 3Nordsjællands Hospital, Hilleroed, Denmark 4BHF Cardiovascular Research Centre, Glasgow, UK.

Abstract text – limited to 250 words

Background: Guideline-recommended disease-modifying pharmacological therapies for heart failure (HF) with reduced ejection fraction are underutilized, particularly among elderly patients. We studied the association of age in adherence and discontinuation of angiotensin-converting enzyme inhibitors/angiotensin-II receptor blockers (ACEi/ARB), beta-blockers (BB) and mineralocorticoid receptor antagonists (MRA).

Methods: Patients with a first HF diagnosis who had initiated ACEi/ARB and BB within 120 days of presentation were included from nationwide registries and divided into three age groups, <65 years (reference), 65-79 and ≥80. 1-year median proportions of daily target doses were calculated.

Adherence was estimated by the proportion of days covered. The 5-year risk of discontinuation was assessed with the Aalen-Johansen estimator. Discontinuation rates were evaluated using Multivariable Cox regression.

Results: 29,482 patients were included. Advancing age was associated with lower median proportions of daily target doses and adherence (ACEi/ARB 79.1%, 77.5%, 69.4%; BB 79.1%, 78.6%, 73.8%), in the <65, 65-79 and ≥80 age groups respectively. Age ≥80 was associated with higher discontinuation rates (cumulative incidence, ACEi/ARB 41%, 44%, 51%; BB 38%, 35%, 39%; hazard ratio, ACEi/ARB 1.60 [95% CI, 1.51-1.69]; BB 1.33 [95% CI, 1.25-1.41]). The risk of MRA discontinuation differed little with age (50%, 54%, 56%), although MRA initiation in the most elderly was less frequent (33%, 33%, 22%).

Conclusions: In a nationwide cohort of HF patients, advanced age was associated with lower proportions of daily target doses, lower adherence, and higher discontinuation rates of ACEi/ARB and BBs. Focus on treatment adherence and optimal dosages among elderly HF patients could improve outcomes.

A10 Cecilie Ølvang Madsen

Abstract title	Peripheral immune signature of responsiveness to TIL therapy using high dimensional single cell analysis
Presenter	Cecilie Ølvang Madsen
Title	Student Assistant
If PhD, year of defence	
Affiliation	National Center for Cancer Immune Therapy, Oncology Department
E-mail	cecilie.oelvang.madsen@regionh.dk
Authors and affiliations	Cecilie Ølvang Madsen(1), Marta Velasco Santiago(1), Troels Holz Borch(1), Morten Hansen*(1), Inge Marie Svane*(1)
	1: National Center for Cancer Immune Therapy, Oncology Department * : these authors have contributed equally to this work and share last authorship

Abstract text – limited to 250 words

Introduction:

Adoptive cell therapy (ACT) with ex-vivo expanded tumor infiltrating lymphocytes (TILs, TIL-ACT) has shown remarkable results in patients with malignant melanoma. Here, we sought to elucidate potential peripheral immune signatures before and early on-treatment to predict patients with positive clinical outcome as well as characterize the impact on circulating immune cells.

Methods:

Peripheral blood mononuclear cell (PBMCs) and serum on-treatment changes from 45 melanoma patients treated with TIL-ACT were retrospectively analyzed. PBMCs were evaluated by algorithm-based clustering and manual gate-setting of major immune cell subsets. Serum cytokine levels was assessed with Multiplex Luminex Assay and ELISA to further reveal specific profiles of responsiveness to TIL-ACT.

Results:

Peripheral immune signature of responsiveness before TIL-ACT was only characterized by higher frequency of CD57+CD8+ effector memory (EM) T-cells. However, after TIL-ACT multiple immune subsets were associated with clinical outcome. Monocytic and NK cell subsets coincided with persistent levels of major pro-inflammatory cytokines, IL-6 and IL-8, in non-responders as opposed to a significant decrease in responding patients. Additionally, responders were characterized by higher frequency of both conventional type 2 dendritic cells (DCs, cDC2s) and plasmacytoid DCs (pDCs), CD4+ T-cells and a subpopulation of CD4+ EM T cells expressing CD28, CD29, CD95, and PD-1.

Conclusion:

TIL-ACT seems to modify both lymphoid and myeloid cell populations in peripheral blood. Here we show that early on-treatment peripheral immune signature of responsiveness to TIL-ACT is characterized by higher frequency of CD4+ T-cells, subsets of DCs, and a decrease in inflammatory cells and their mediators.

A11 Christian Rønn

Abstract title	Chronic Obstructive Pulmonary Disease and pneumonia hospitalisation: Association with dose of inhaled corticosteroids.
Presenter	Christian Rønn
Title	MD, PhD-student
If PhD, year of defence	
Affiliation	Section of Respiratory Medicine, Department of Medicine, Copenhagen University Hospital - Herlev Gentofte Hospital, Hellerup, Denmark
E-mail	christian.roenn@regionh.dk
Authors and affiliations	Pradeesh Sivapalan, Josefin Eklöf, Charlotte Suppli Ulrik, Jens-Ulrik Stæhr Jensen.

Abstract text – limited to 250 words

Background

International guidelines advocate only use of inhaled corticosteroids (ICS) in patients with chronic obstructive pulmonary disease (COPD) experiencing recurring exacerbations and eosinophilic inflammation. However, ICS is widely used in COPD patients without exacerbations and sign of eosinophilic inflammation, thus possibly increasing the risk of hospitalisation with pneumonia. We aimed to determine the risk of hospitalisation with pneumonia associated with increasing cumulated ICS doses among COPD-patients, thus to establish if there is a dose-dependency

Methods

A retrospective cohort-study including all COPD patients treated in a respiratory outpatient clinic in our country. Patients were divided in four groups based on average daily ICS exposure. Dose-response relationship was investigated by a multivariable Cox proportional hazard regression analysis.

Results In total 52,100 patients were included, divided in the no use (n=15,755), low use (n=12,050), moderate use (n=12,488) and high use (n=11,807) groups, respectively. ICS use was strongly associated with hospitalisation with pneumonia, HR 1.3 (CI 1.2-1.3) (ICS vs no ICS). The risk of hospitalisation with pneumonia increased for every dosing group step: Low dose: HR 1.1 (CI 1.0-1.2), moderate dose: HR 1.2 (CI 1.1-1.3), and high dose: HR 1.5 (CI 1.4-1.6), "no use" was the reference. . Sensitivity analyses confirmed these findings.

Conclusions

We found that ICS, in a dose-response relationship, was associated with a substantially increased risk of hospitalisation with pneumonia of up to 50% increased risk. Our data support that ICS should be administered at the lowest possible dose and only to COPD patients who have a documented need.

A12 Christopher Aled Chamberlain

Abstract title	A pan-cancer signature identifies tumour-reacting CD8+ TILs and reveals their functional heterogeneityChr
Presenter	Christopher Aled Chamberlain
Title	Msc
If PhD, year of defence	
Affiliation	National Center for Cancer Immune Therapy, Department of Oncology
E-mail	christopher.aled.chamberlain@regionh.dk
Authors and affiliations	Christopher Aled Chamberlain¹, Arianna Draghi¹, Shawez Khan¹, Katja Harbst^{2,3}, Mario Presti¹, Aimilia Schina^{1,4}, Agnete Witnes Præst Jensen¹, Anne-Christine Kiel Rasmussen¹, Torben Lorentzen⁵, Jakob Vasehus Schou⁶, Göran Jönsson^{2,3}, Inge Marie Svane^{1,6}, Marco Donia^{1,6} ¹National Center for Cancer Immune Therapy (CCIT-DK), Department of Oncology, Copenhagen University Hospital, Herlev, Denmark ²Division of Oncology and Pathology, Department of Clinical Sciences Lund, Faculty of Medicine, Lund University, Lund, Sweden ³Lund University Cancer Centre, Lund University, Lund, Sweden ⁴Danish Cancer Society Research Center, Copenhagen, Denmark ⁵Department of Gastroenterology, Copenhagen University Hospital, Herlev, Denmark ⁶Department of Oncology, Copenhagen University Hospital, Herlev, Denmark

Abstract text – limited to 250 words

Introduction: Identification and characterisation of CD8+ tumour-reacting tumour-infiltrating lymphocytes (TILs) is a key focus for understanding TIL:tumor interactions in the tumour microenvironment. Current methods overlook their functional profiles and therefore may not analyse the heterogeneity of TIL responses to stimulation. Therefore, we set out to identify tumour-reacting CD8+ TILs and characterize their functional profiles at the single-cell level pan-cancer.

Methods: in vitro cultured TILs and matching autologous tumour cell lines (TCLs) were derived from metastatic melanoma, renal cell carcinoma, sarcoma, colorectal cancer, and ovarian cancer patient samples (n=13). TILs were cocultured with their wildtype or a control TCL, sorted for CD8+, and single-cell RNA sequenced (scRNAseq) to form a discovery dataset. Publicly available scRNAseq datasets (n=25, 12 histologies) of fresh tumour biopsies were obtained and merged into a singular validation dataset. Cell Ranger and Seurat were used for data processing and analysis.

Results: A tumour-reacting CD8+ TIL signature (TR8S) clearly differentiated tumour-reacting and non-reacting CD8+ bulk TILs. Characterisation of TR8Shi cells revealed diverse sub-populations with distinct and heterogeneous functional profiles, many of which could be re-identified in the validation dataset. In particular, an XCL1hiXCL2hi cluster and a separate CCL3hiCCL4hi cluster dominated the reacting population.

Conclusions: Our results indicate that the TR8S is an effective pan-cancer tool for identifying and characterising actively tumour-reacting CD8+ TILs. Furthermore, our data highlight the complexity of the actively tumour-reacting CD8+ TIL population and that deeper investigation of their functional abilities is warranted. Specifically, the prevalence of distinct clusters may have immunotherapeutical predictive/prognostic strength.

A13 David Horner

Abstract title	A Maternal Western Dietary Pattern during Pregnancy is associated with Neurodevelopmental Disorders in 10-year-old Children
Presenter	David Horner
Title	Medical Doctor, Phd Student
If PhD, year of defence	2023
Affiliation	COPSAC, Afdeling for Børn og Unge
E-mail	david.horner@dbac.dk
Authors and affiliations	David Horner MD MSc, Jens Richardt Jepsen, MSc PhD, Bo Chawes, MD, PhD, Klaus Bønnelykke, MD, PhD, Kristina Aagard MD, Julie Rosenberg MD, Parisa Mohammadzadeh MD, Astrid Sevelsted MSc PhD, Nilo Følsgaard MD PhD, Rebecca Vinding MD PhD, Birgitte Fagerlund PhD, Christos Pantelis MD PhD, Niels Bilenberg MD PhD, Hans Bisgaard, DMSc, Bjørn Ebdrup, MD, PhD, Jakob Stokholm, MD, Ph.D, Morten Rasmussen PhD

Abstract text – limited to 250 words

Introduction

Neurodevelopmental disorders in childhood are prevalent. Dietary patterns during pregnancy may contribute. We aim to identify dietary patterns in pregnancy that associate with child neurodevelopmental disorders at 10 years in the COPSAC2010 mother-child cohort (n = 700).

Methods

Pregnancy dietary patterns were derived from food frequency questionnaires. Associations with neurodevelopmental disorders and neurodevelopmental trait severity scores (NTSS) were estimated using multivariate regression models, adjusted for relevant confounders. Polygenic risk scores for Autism Spectrum Disorder (ASD) and Attention-Deficit/ Hyperactivity Disorder (ADHD) were assessed for gene-environment interactions with NTSS (SRS-2 & ADHD-RS respectively). Maternal and child metabolomes are utilized to support our findings and for temporal analysis.

Results

We use principal component analysis to identify a western dietary pattern that is significantly associated with ASD diagnosis (OR 2.18, p = 0.005), ADHD diagnosis (OR 1.57, p = 0.003) and NTSS (ASD p < 0.001, ADHD p < 0.001). We find significant gene-environment interaction for ASD NTSS (p = 0.047), with an augmented 3-way interaction with maternal BMI (p = 0.002). Findings were sex dependant for ADHD NTSS (p = 0.012 & p = 0.004). Through longitudinal analysis of the maternal and child metabolomes, we find evidence for prenatal programming (ADHD diagnosis p = 0.031, SRS-2 p = 0.001, ADHD-RS p < 0.001)

Conclusion

We identify a maternal western dietary pattern in pregnancy that is associated with child neurodevelopmental disorders. We identify significant gene-environment interaction for ASD and ADHD trait severity scores. We find evidence of prenatal programming. A maternal western dietary pattern may contribute to child neurodevelopmental disorders.

A14 Deewa Zahir Anjum

Abstract title	Temporal trends in initiation of mineralocorticoid receptor antagonists and risk of subsequent withdrawal in patients with heart failure: a nationwide study in Denmark from 2003–2017
Presenter	Deewa Zahir
Title	MD
If PhD, year of defence	
Affiliation	Department of Cardiology, Copenhagen University Hospital, Hellerup
E-mail	deewa.zahir.anjum@regionh.dk
Authors and affiliations	Deewa Zahir ^{1*} , Anders Bonde ¹ , Christian Madelaire ² , Morten Malmberg ³ , Jawad H. Butt ⁴ , Emil Fosbol ⁴ , Gunnar Gislason ^{1,3,5,6} , Christian Torp-Pedersen ^{7,8} , Charlotte Andersson ^{1,9} , Patrick Rossignol ¹⁰ , John J.V. McMurray ¹¹ , Lars Kober ^{4,5} , and Morten Schou ¹

Abstract text – limited to 250 words

Introduction: Despite landmark heart failure (HF) with reduced ejection fraction (HFrEF) trials showing effect of mineralocorticoid receptor antagonists (MRA) on the risk of death and HF hospitalization, it has been suggested that MRAs are underutilized or frequently withdrawn. This study sought to identify temporal trends in the initiation of MRAs and the subsequent risk of withdrawal and adherence of MRAs in HF patients treated with a renin–angiotensin system inhibitor and a beta-blocker in Denmark from 2003–2017.

Methods: From nationwide registries, we identified patients receiving a diagnosis of HF. Use of MRA was identified by at least one prescription within 6 months after the diagnosis. The absolute risk of withdrawal with treatment was assessed with cumulative incidence, accounting for the competing risk of death. To estimate adherence, we calculated the proportion of days covered.

Results: We included 51 512 patients with incident HF. During the study period, 20 779 (40.3%) patients initiated MRA therapy. The incidence of withdrawal of MRA was 49.2% throughout the study period; 48.0% of the HF patients were adherent to the treatment. Among patients withdrawing treatment with MRA, the cumulative incidence of reinitiating was 36.6%.

Conclusions In a nationwide cohort of patients with HF, approximately half of the patients received MRA as third-line therapy within the first 6 months after diagnosis and approximately half of these withdrew MRA within 5 years. These findings warrant an increasing focus on retention to MRA treatment in a real-life setting.

A15 Felix Müller

Abstract title	Dual-Energy CT in Suspected Scaphoid Fractures: Evaluation of the Clinical Implementation
Presenter	Felix C. Müller
Title	MD, PhD
If PhD, year of defence	2021
Affiliation	Department of Radiology, Herlev and Gentofte Hospital
E-mail	christoph.felix.mueller@regionh.dk
Authors and affiliations	Felix C. Müller Henriette Raaschou Kasper Gosvig all at the Department of Radiology, Herlev and Gentofte Hospital

Abstract text – limited to 250 words

Since December 2020 patients with a suspected scaphoid fracture and negative wrist radiographs have been examined with an in-house developed Dual-Energy CT technique. The purpose of this study was to evaluate this novel implementation.

Methods:

The need for patient consent was waived in this quality improvement study. We screened 322 patients for eligibility, who had undergone a CT of the wrist between December 2020 and June 2021. 235 fulfilled the inclusion criteria. We assessed the electronic health record and PACS for any follow up visit or radiological imaging of the wrist for a period of 12 months after the trauma. Virtual radiographs were calculated using a research prototype and volar tilt and scapholunate distance measured on the virtual and true radiograph.

Results:

Of 214 adults 5.6%(12/214) had a definite or likely scaphoid fracture, 17.9%(39/214) a radius fracture and 21%(44/214) other fractures. Of 21 children 38.5%(8/21) had a scaphoid fracture, 4.8%(1/21) a possible radius fracture and 4.8%(1/21) a capitate fracture. Two patients received treatment for an ulnar collateral ligament injury. Three patients were imaged after a new trauma and diagnosed with a scaphoid avulsion, a radius fracture and a scapholunate dissociation. Mean error between volar tilt measured on virtual radiographs and true radiographs was 4.4 degrees and mean error between scapholunate distance 0.3mm.

Conclusion:

Dual-Energy CT is a safe imaging modality for assessment of radiographically negative scaphoid fractures in children and adults. The technique allows for accurate measurement of the scapholunate distance and volar tilt.

B16 Frederikke Rosenvinge Skov

Abstract title	Type 2-high airway inflammation in childhood asthma distinguishes a more severe phenotype
Presenter	Frederikke Rosenvinge Skov
Title	MD, ph.d. student
If PhD, year of defence	2025
Affiliation	Copenhagen Prospective Studies on Asthma in Childhood (COPSAC)
E-mail	frederikke.skov@icloud.com
Authors and affiliations	Frederikke R Skov ^{1,2} ; Bo L Chawes ¹ ; Klaus Bønnelykke ¹ ; Jakob Stokholm ^{1,2} ; Hans Bisgaard ¹ ; Ann-Marie M. Schoos ^{1,2} 1 COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark; 2 Department of Pediatrics, Slagelse Sygehus, Slagelse, Denmark; 3 Section of Microbiology and Fermentation, Department of Food Science, University of Copenhagen

Abstract text – limited to 250 words Rationale: There is a limited number of biomarkers to identify different phenotypes of childhood asthma, most reflecting type 2-high (T2-high) airway inflammation. It is largely unknown whether such phenotyping can distinguish disease persistency and trajectories. Methods: We included 338 children from the Copenhagen Prospective Studies on Asthma in Childhood2000 at-risk mother-child cohort. Asthma was diagnosed longitudinally through the follow-up period. Measurement of specific airway resistance (sRaw) was obtained at every visit from age 3. T2-high and T2-low asthma was defined at age 7 as asthma with vs. without aeroallergen sensitization and/or fractional exhaled nitric oxide ≥ 20 ppb and/or blood eosinophil count $\geq 0.5 \times 10^9/L$. Differences in lung function trajectories and natural history of asthma through the first 18 years of life were analysed using linear mixed models and logistic regression.

Results: At age 7, 26 children had T2-high and 21 had T2-low asthma. sRaw was 17 % higher through childhood in children with T2-high compared to T2-low asthma (0.17 [0.03–0.30]; $p=0.01$), see Figure 1, the median age of onset was 3.6 and 1.8 years ($p<0.01$), and the mean duration of asthma was 9.9 vs. 5.6 years respectively ($p=0.045$). Twelve children (46%) with T2-high had asthma persisting to 18 years as compared to 2 (9%) with T2-low; OR=8.14 [1.57–42.3]; $p=0.01$, and mean number of exacerbations through childhood were 4 and 5 respectively ($p>0.05$). Conclusion: The T2-high pediatric asthma phenotype has significantly later onset, is significantly more persistent and with higher airway resistance compared to T2-low.

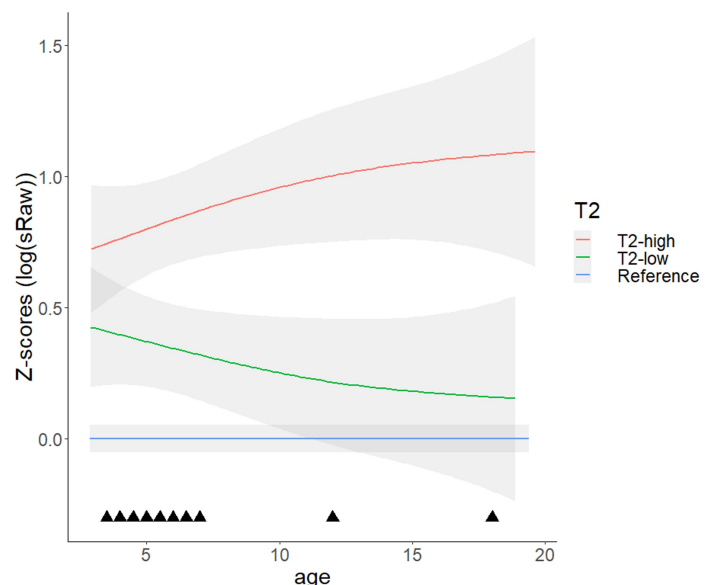


Figure 1

B17 Gitte Holmen Olofsson

Abstract title	Aiming high in HI-AIM; A clinical testing of exercise in cancer
Presenter	Gitte Holmen Olofsson
Title	PhD
If PhD, year of defence	2018
Affiliation	National Center for Cancer Immune Therapy (DK-CCIT)
E-mail	gitte.holmen.olofsson@regionh.dk
Authors and affiliations	Gitte Holmen Olofsson ¹ , Agnete Witness Praest Jensen ¹ , Thy Viet Luu ¹ , Ana Micaela Carnaz Simões ¹ and Per thor Straten ^{1,2} ¹ National Center for Cancer Immune Therapy (DK-CCIT), Dept of Oncology, University Hospital Herlev; Denmark; ² Department of Immunology and Microbiology, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark

Abstract text – limited to 250 words

Immunotherapy of cancer has experienced tremendous breakthroughs over the past few years. Thus, the well characterized capacity of the immune system to recognize and kill cancer cells, is also being exploited in the clinic. However, predictive markers for response are largely missing, but infiltration into the tumor microenvironment has been shown in several studies to correspond to response. In this regard, we and others have shown in mouse tumor models, that exercise lead to an adrenalin mediated increase in influx of T and NK cells into the tumor in turn improving the chance for response to CPI therapy. We have therefore established the clinical trial HI AIM to test this in patients. HI-AIM (NCT04263467) is a randomized controlled trial (70 patients,1:1) aimed to investigate if high-intensive training can mobilize and activate the immune system, and thereby enhance the effect of the immunotherapy in patients with lung cancer. Besides routine oncological measures, blood samples and biopsies, will form the basis for immunological measurements of various cancer and immune system markers. Preliminary data shows successful exercise-mediated mobilization of immune cells to the peripheral blood, together with increasing adrenaline and noradrenaline levels. To this end, the functional impact of β 2-Adrenalin Receptor (β 2-AR) signaling on immune cells is a double-edge-sword. We show that β 2-AR activation in T cells, actually inhibit T cell cytokine secretion upon stimulation with high concentration of the β -AR agonist isoprenaline, but not at physiological concentrations. We believe that the HI AIM study will produce important data in the field of exercise-oncology/immunology.

B18 Heidi Shil Eddelien

Abstract title	Implementing an Acute Stroke Care Bundle initiated by Specialized Stroke Unit Nurses in the Emergency Department to Reduce Mortality.
Presenter	Heidi Shil Eddelien
Title	Nurse, Ph.D. student
If PhD, year of defence	
Affiliation	Neurology, Herlev Hospital. Clinical Medicine, University of Copenhagen
E-mail	heidi.shil.eddelien.01@regionh.dk
Authors and affiliations	Eddelien HS (1), Sagar M (1) Wested H (2), Butt JH (3), Kruuse C (1) (1) Neurology, Herlev Hospital. Clinical Medicine, University of Copenhagen (2) Clinical Quality and Patient Course, Herlev Hospital (3) Cardiology, Rigshospitalet, Clinical Medicine, University of Copenhagen

Abstract text – limited to 250 words

Introduction. Early nurse specific interventions in acute stroke are associated with reduce short term mortality. We investigated feasibility of implementing front-line stroke nurses collaborating with emergency care nurses (ECN), and if early fulfilment of an acute stroke care bundle upon admission to the Emergency Department (ED) reduced mortality.

Method. We carried out an interventional pilot study with implementation of stroke nurses in the ED. We monitored fulfilment of stroke care as well as mortality of patients ≥ 18 years with a verified diagnosis of stroke, in three time periods: preintervention, intervention, and postintervention, admitted via the ED. We analyzed the odds of mortality by logistic regression modelling, dependent on time periods.

Results. In total, 646 patients with stroke were included, median age 75 years [25th – 75th percentile 66-83], (45% women). Fulfillment of the stroke care bundle increased when a front-line stroke nurse worked alongside the ECN. The average time in hospital decreased 2 days in the postintervention period. After admission, 4% of patients had died at 30 days. However, the difference in mortality rates between preintervention and postintervention periods were insignificant.

Conclusion. Implementation of a front-line stroke nurse in addition to an ECN was feasible, increased fulfilment of stroke care bundle in the ED, and reduced length of stay in hospital. Mortality was low 30-days after admission. Hence, a new larger scale study with long-term monitoring is warranted.

B19 Jakob Boesgaard Norsk

Abstract title	Yield of echocardiographic screening of first-degree relatives of children with bicuspid aortic valve
Presenter	Jakob Boesgaard Norsk
Title	MD
If PhD, year of defence	
Affiliation	Department of Cardiology S103
E-mail	jakob.boesgaard.norsk@regionh.dk
Authors and affiliations	Jakob Boesgaard Norsk MD1,2, Anne-Sophie Sillesen MD PhD1,2, Anna Axelsson Raja MD PhD2, Maria Munk Pærregaard MD1,2, Sofie Dannesbo MD1,2, Magdalena Hansson MD1, Thilde Olivia Kock BSc1,2 Niels Vejstrup MD PhD2, Kasper Iversen MD DMSc1,3, Henning Bundgaard MD DMSc2 1 Department of Cardiology, Copenhagen University Hospital, Herlev-Gentofte Hospital, and Department of Clinical Medicine, University of Copenhagen, Denmark 2 Department of Cardiology, The Heart Centre, Copenhagen University Hospital, Rigshospitalet

Abstract text – limited to 250 words

Introduction: Bicuspid aortic valve (BAV) is the most common congenital heart defect, affecting 0.8% of new-borns. The prevalence of BAV in first-degree relatives of symptomatic BAV patients, is reported to be 5-10%. First-degree relatives have an increased risk of aortic dilatation, independently of aortic valve morphology.

Method: In the Copenhagen Baby Heart Study (n>25,000), a total of 197 children, were diagnosed with BAV. First-degree relatives were examined with echocardiography. Aortic dilatation in children were defined as aortic root or ascending aorta diameter ≥ 2 standard deviations from the expected mean, In adults, aortic dilatation was defined as aortic root and/or ascending aorta diameters exceeding reference values. Controls were first-degree relatives to children with tricuspid aortic valves, matched on gender of index child, maternal age at birth, twin/singleton status, and parity.

Results: In total, 381 first-degree relatives were included in the case group, and 210 first-degree relatives in the control group. BAV was diagnosed in 7.3% of the case group and 2.4% of the control group ($p < 0.05$). Dilatation of the aortic root and/or ascending aorta was observed in 8.7% of the case group and 5.7% of the control group ($p < 0.05$). Aortic valve regurgitation was observed in 8.4% of the case group and 3.8% of the control group ($p < 0.05$). Total yield was 19.4% in the case group versus 7.7% in the control group ($p < 0.05$).

Conclusion: First-degree relatives to unselected infants with BAV, have significantly higher prevalences of BAV, aortopathy and aortic valve regurgitation, compared with first-degree relatives to infants with normal aortic valve

B20 Jonas Henrik Kristensen

Abstract title	Estimating the true half-life of cardiac troponin I – a novel methodological approach
Presenter	Jonas H. Kristensen
Title	MD
If PhD, year of defence	
Affiliation	
E-mail	jonas.henrik.kristensen@regionh.dk
Authors and affiliations	Jonas Henrik Kristensen^{1,2,3}, Rasmus Bo Hasselbalch^{1,2,3}, Nina Strandkjær^{1,2,3}, Nicoline Jørgensen, Morten Østergaard⁶, Peter Hasse Møller-Sørensen⁶, Jens Christian Nilsson⁶, Shoaib Afzal⁷, Pia Rørbaek Kamstrup⁷, Lene Holmvang⁴, Jesper Kjærgaard⁴, Lia Evi Bang⁴, Kim Dalhoff⁵, Henning Bundgaard^{3,4}, Kasper Karmark Iversen^{1,2,3}. 1 Department of Cardiology, Copenhagen University Hospital - Herlev and Gentofte, Borgmester Ib Juuls vej 1, 2730 Herlev, Denmark 2 Department of Emergency Medicine, Copenhagen University Hospital - Herlev and Gentofte, Borgmester Ib Juuls vej 1, 2730 Herlev, Denmark 3 Department of Clinical Medicine, University of Copenhagen, Blegdamsvej 3B, 2200 Copenhagen, Denmark 4 Department of Cardiology, Copenhagen University Hospital - Rigshospitalet, Blegdamsvej 9, 2100 Copenhagen, Denmark 5 Department of Clinical Pharmacology, Copenhagen University Hospital – Bispebjerg and Frederiksberg, Bispebjerg Bakke 23, 2400 Copenhagen, Denmark 6 Thoracic intensive unit, Copenhagen University Hospital - Rigshospitalet, Blegdamsvej 9, 2100 Copenhagen, Denmark 7 Department of Biochemistry, Copenhagen University Hospital - Herlev and Gentofte, Borgmester Ib Juuls vej 1, 2730 Herlev, Denmark

Abstract text – limited to 250 words Introduction

The half-life of released cTn in the bloodstream is largely unknown. In the clinic the true half-life cannot be estimated due to ongoing leakage of cTn from cardiomyocytes. Knowledge of the true half-life in humans is essential to understand the pathophysiological processes of all diseases in the myocardium. The purpose of this study was to determine the half-life of cTn I (cTnI).

Methods

Patients with STEMI were included within 24hours of primary PCI and underwent plasmapheresis to "harvest" plasma with a high cTnI concentration. One to three months later patients received a re-transfusion of their own plasma. Blood samples were drawn at fixed time points during the following eight hours. Siemens Atellica IM Analyzer was used to analyze cTnI concentrations. We used a two phased model to estimate the half-life of cTnI.

Results

Seven patients received a re-transfusion of their own plasma. Median age was 70 and two were women. Following infusion of 180-679mL plasma the median concentration of cTnI was 2190ng/L (IQR 1750-4990). The first phase seemed to be a redistribution phase and followed an exponential decline. The second phase followed a linear decline. Mean half-life for the first phase was 14min (95%CI 11-17min) and for the second phase 82min (95%CI 68-96min).

Conclusion

This study showed a several fold shorter half-life of cTnI compared to previous estimates, i.e. previously the cTnI leakage from the myocardium has been grossly underestimated. These findings improve our understanding of the clinical course of MI and can potentially change monitoring and guide new interventions.

B21 Julie B.K. Sølberg

Abstract title	The proteome of hand eczema assessed by tape stripping
Presenter	Julie B.K. Sølberg
Title	PhD, MSc
If PhD, year of defence	2021
Affiliation	The National Allergy Research Centre, Department of Dermatology and Allergy, Copenhagen University Hospital Herlev-Gentofte, Hellerup, Denmark
E-mail	Julie.Soelberg@regionh.dk
Authors and affiliations	Julie B.K. Sølberg 1, Anna S. Quaade 1, Lylia Drici 2, Karolina Sulek 2, Nina Heede Ulrich 1, Marianne B. Løvendorf 3,4, Jacob P. Thyssen 3, Matthias Mann 2, Beatrice Dyring-Andersen 1,2,4 and Jeanne D. Johansen 1 1 The National Allergy Research Centre, Copenhagen University Hospital Herlev-Gentofte, Hellerup, Denmark. 2 Novo Nordisk Foundation (NNF) Center for Protein Research, Faculty of Health and Medical Sciences, University of Copenhagen, Denmark 3Department of Dermatology and Allergy, Copenhagen University Hospital Herlev-Gentofte, Hellerup, Denmark. 4LEO Foundation Skin Immunology Research Center, Faculty of Health and Medical Sciences, University of Copenhagen, Denmark

Abstract text – limited to 250 words Hand eczema (HE) is a highly prevalent, often multifactorial and potentially debilitating skin disease. Few studies have investigated subtype-specific biomarkers, and no studies have so far investigated the proteome of HE using tape strips. Here, we assessed the protein expression in subtypes of HE using two consecutive tape strips. Tape strips were collected from lesional and non-lesional skin of patients with HE (n=34) and healthy skin of age-matched controls (n=13). Patients with HE included both patients with (n=18) and without atopic dermatitis (AD) (n=18). Mass spectrometry-based proteomic analyses were performed using data-independent acquisition, and the global protein expression was analysed. We identified 2,919 proteins. The global protein differences included an increased expression of immune-related markers such as the alarmins KRT6A, KRT16 and KRT17 and a decreased expression of FLG2 and the antimicrobial peptide dermicidin for lesional skin. Though the difference between HE subtypes was restricted to the lesional skin areas, the difference between non-lesional and healthy skin showed a general skin barrier impairment of HE patients including a higher expression of IL-18 and a lower expression of FLG in non-lesional skin. The difference between HE subtypes included an increased expression of FLG2 and LOR, independently of concurrent AD, and a lower expression of KRT16 for HE patients with AD. This method can be used independently of localization on the hands and shows potential for assessing the proteomic differences between subtypes of HE.

B22 Kristina Aagaard

Abstract title	High-dose vitamin D supplementation in pregnancy and risk of autism spectrum and attention deficit hyperactivity disorder at age 10 - A randomized clinical trial
Presenter	Kristina Aagaard
Title	MD
If PhD, year of defence	
Affiliation	Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Gentofte, Denmark
E-mail	kristina.aagaard@dbac.dk
Authors and affiliations	Kristina Aagaard MD (1), Jens Richardt Møllegaard Jepsen MSc PhD (2), Astrid Sevelsted MSc PhD (1), Rebecca Vinding MD PhD (1), Julie Bøjstrup Rosenberg MD (1+2), Parisa Mohammadzadeh MD (1+2), David Horner MD (1), Ann-Marie Malby Schoos MD PhD (1+3), Jakob Stokholm MD PhD (1), Klaus Bønnelykke MD PhD (1+4), Hans Bisgaard MD DMSc (1)*, Bjørn H. Ebdrup MD PhD (2+4)*, Bo Chawes MD PhD DMSc (1+4)* 1) Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Gentofte, Denmark 2) Center for Neuropsychiatric Schizophrenia Research (CNSR) & Center for Clinical Intervention and Neuropsychiatric Schizophrenia Research (CINS), Mental Health Centre Glostrup, University of Copenhagen, Glostrup, Denmark 3) Department of Pediatrics, Slagelse Hospital, Slagelse, Denmark 4) Faculty of Health and Medical Sciences, Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark *Contributed equally

Abstract text – limited to 250 words

Introduction: Vitamin D deficiency is highly prevalent in pregnancy and may increase risk of autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD) according to observational studies.

Methods: This double-blinded randomized clinical trial was part of the COpenhagen Prospective Study on Neuro-PSYChiatric Development (COPSYCH) project nested within the COPSAC2010 cohort comprising 700 mother-child pairs enrolled at week 24 of pregnancy. Maternal 25(OH)D was measured at inclusion and 584 mothers were randomized to either 400 IU/d or 2800 IU/d vitamin D until 1 week after birth. At age 10, psychopathological diagnoses and preliminary symptom scores were established using the Kiddie-Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version.

Results: 590 children completed the psychopathological evaluation: 16 (2.7%) were diagnosed with ASD and 65 (11.0%) with ADHD. Hereof, 495 participated in the vitamin D trial. High-dose vitamin D was not associated with risk of ASD or ADHD diagnosis. However, higher maternal pre-intervention 25(OH)D associated with reduced risk of ASD and ADHD and lower ASD symptom score. Finally, in analyses stratified on maternal pre-intervention 25(OH)D, high-dose vitamin D supplementation was associated with lower ASD symptom score in offspring of vitamin D sufficient mothers (≥ 75 nmol/L): $\beta = -0.28$ (-0.51- -0.05), $p = 0.015$, but not among offspring of vitamin D insufficient mothers (< 75 nmol/L): -0.04 (-0.40-0.32), $p = 0.837$.

Conclusions: High dose vitamin D supplementation in third trimester had no effect on ASD or ADHD diagnosis, but may reduce risk of child ASD symptoms among offspring of mothers with sufficient pre-intervention 25(OH)D.

B23 Lina M Åström

Abstract title	Online adaptive radiotherapy of anal cancer: normal tissue sparing, target propagation methods, and first clinical experience
Presenter	Lina M Åström
Title	Medical Physicist, MSc
If PhD, year of defence	
Affiliation	Department of Oncology
E-mail	lina.frida.moeller.aastroem@regionh.dk
Authors and affiliations	Lina M Åström (a,b), Claus P Behrens (a,b), Katrine Smedegaard Storm (a), Patrik Sibolt (a), and Eva Serup-Hansen (a) a) Department of Oncology, Copenhagen University Hospital – Herlev and Gentofte, Copenhagen, Denmark b) Department of Health Technology, Technical University of Denmark, Roskilde, Denmark

Abstract text – limited to 250 words

Introduction

Online adaptive radiotherapy (oART) potentially spares OARs as PTV margins are reduced. This study evaluates dosimetric benefits, compared to standard non-adaptive radiotherapy (non-ART), target propagation methods, and first clinical treatments of CBCT-guided oART of anal cancer.

Methods

Treatment plans with standard non-ART and reduced oART PTV margins were retrospectively generated for 23 consecutive patients with anal cancer. For five patients randomly selected among the 23 patients, weekly CBCT-guided oART sessions were simulated, where the targets were either deformed or rigidly propagated. Preferred target propagation method and dose to OARs were evaluated.

Ten consecutive patients with anal cancer were treated with CBCT-guided oART. Target propagation methods and oART procedure time were evaluated.

Results

For the retrospective treatment plans, oART resulted in median reductions in bowel bag V45Gy of 11.4% and bladder V35Gy of 16.1%. Corresponding values for the simulated sessions were 7.5% and 27.1%. In the simulated sessions, 35% of all targets were deformed while 65% were rigidly propagated. Manual editing and rigid propagation were necessary to obtain acceptable target coverage.

In the clinical treatments, the primary and some elective targets were rigidly propagated, while other targets were deformed. The median oART procedure time, measured from CBCT acquisition to completion of plan review and QA, was 23 min.

Conclusions

Simulated oART reduced the dose to OARs, indicating potential reduction in toxicity. Rigid propagation of targets was necessary to reduce the need for manual edit. Clinical treatments demonstrated that oART of anal cancer is feasible but time-consuming.

B24 Louisa Bønløkke Nervil

Abstract title	Correlation between basic training in visual skin cancer diagnostics and the effect on pathologists' assessment of melanocytic skin lesions - Results from a pilot of a controlled randomized study
Presenter	Louisa Bønløkke Nervil
Title	Medical doctor
If PhD, year of defence	
Affiliation	Department of plastic surgery, Herlev Hospital
E-mail	Louisa.boenloekke.hansen@regionh.dk
Authors and affiliations	Louisa Bønløkke Nervil, Department of Plastic Surgery, Herlev Hospital Niels Kvorning Tervov, Department of Plastic Surgery, Herlev Hospital Lisbet Hölmich, Department of Plastic Surgery, Herlev Hospital Annette Chakera, AGATA private Hospital

Abstract text – limited to 250 words

There is high diagnostic inter-rater variability among pathologists interpreting melanocytic skin lesions. This study aims to investigate how basic training in visual skin cancer diagnostics affects the histopathological assessment of melanocytic lesions when the pathologist has access to clinical and dermoscopic images during the histopathological evaluation.

Participating pathologists were randomized, asked to take an evidence-based skin cancer Multiple Choice Questionnaire (MCQ), and the intervention group was given access to an educational application with case-based pattern recognition training for ten days. All pathologists assessed a minimum of 50/217 DAHT cases (Dermoscopy Augmented Histology Trial), registering diagnosis, confidence, difficulty, and whether they wanted a second opinion or an additional stain (MelanA).

In ten days, the intervention group raised their average score in the evidence-based skin cancer MCQ test from 6.33/12 to 9/12 points. The average perceived difficulty score for the DAHT cases was 2.63/6 for the control group and 1.97/6 for the intervention group. The average confidence score was 2.77/6 for the control group and 1.88/6 for the intervention group. No differences between the control and intervention groups were seen according to the request for MelanA or second opinion.

This study indicates that training in visual skin cancer diagnostics over a short period can affect the pathologists' confidence and perceived difficulty when interpreting skin lesions. Few participating pathologists precluded conclusions about the inter-rater reliability or accuracy between the two groups. Therefore, a more extensive study is needed.

B25 Louise Tønnesen

Abstract title	The impact of social distancing in 2020 on admission rates for exacerbations in asthma; a nationwide cohort study.
Presenter	Louise Tønnesen
Title	MD, PhD
If PhD, year of defence	2017
Affiliation	1Section of Respiratory Medicine, Copenhagen University Hospital, Herlev-Gentofte, Denmark
E-mail	louise.toennesen@gmail.com
Authors and affiliations	Louise Lindhardt Toennesen, MD, PhD1,2,, Barbara Bonnesen Bertelsen, MD1, Pradeesh Sivapalan, MD, PhD1,3, Alexander Svorre Jordan, BSc1, Mohamad Isam Saeed, BSc1, Josefin Eklöf, MD, PhD1, Charlotte Suppli Ulrik, DMSc2, Kristoffer Grundtvig Skaarup, MD4, Mats Christian Højberg Lassen, MD4, Tor Biering-Sørensen, MD, PhD4, Jens-Ulrik Stæhr Jensen, MD, PhD1,5 1Section of Respiratory Medicine, Copenhagen University Hospital, Herlev-Gentofte, Denmark 2Department of Respiratory Medicine, Copenhagen University Hospital, Hvidovre , Denmark 3Department of internal Medicine, Zealand Hospital, University of Copenhagen, Roskilde, Denmark 4 Department of Cardiology, Copenhagen University Hospital, Herlev-Gentofte, Denmark 5Department of Clinical Medicine, Faculty of Health Sciences, University of Copenhagen

Abstract text – limited to 250 words

Introduction. Social distancing measures introduced during the COVID-19 pandemic have reduced admission rates for a variety of infectious and non-infectious respiratory diseases. We hypothesized that rates of asthma exacerbations would decline following the national lockdown in Denmark.

Objective: To determine weekly rates of in- and out-of-hospital asthma exacerbations prior to and during the social distancing intervention implemented on March 12, 2020.

Methods: All individuals >18 years with at least one out-patient hospital contact with asthma as the main diagnosis from January 1, 2013, to December 31, 2017, were included. Weekly asthma exacerbation rates from January 1, 2018, to May 22, 2020, were calculated . An interrupted time-series (ITS model) with the lockdown on March 12, 2020, as the point of interruption was conducted.

Results: A total of 38,225 patients with asthma were identified. The ITS model showed no immediate fall in exacerbation rates during the first week after March 12, 2020. However, there was a significant decline in weekly exacerbation rates in the following 10 weeks (change in trend for exacerbations requiring hospitalisation: -0.75 [95% CI -1.39,-0.12], ($p < 0.02$) and in all asthma exacerbations: -12.2 [95% CI -19.1,-5.4], ($p < 0.001$), amounting to a reduction of ~1 and 16.5 exacerbations per year per 100 patients in the cohort, respectively.

Conclusion: The introduction of the social distancing measures in Denmark did not lead to an immediate reduction in asthma exacerbation rates, however, a gradual decline in exacerbation rates during the following 10-weeks period was observed.

B26 Madeline Kvist

Abstract title	Abdominal Subcutaneous Obesity and the Risk of Burst Abdomen: a matched case-control study
Presenter	Madeline Kvist
Title	MB
If PhD, year of defence	
Affiliation	Department of Gastrointestinal- and Hepatic diseases.
E-mail	madeline.kvist@regionh.dk
Authors and affiliations	Madeline Kvist, Dept. of Gastrointestinal- and Hepatic diseases. Jakob Burcharth, Dept. of Gastrointestinal- and Hepatic diseases. Yousef W. Nielsen, Dept. of Radiology. Thomas K. Jensen, Dept. of Gastrointestinal- and Hepatic diseases

Abstract text – limited to 250 words

Introduction: The causes of burst abdomen after midline laparotomy remain uncertain. Obesity is a suspected risk factor. The purpose of this study was to investigate the association between abdominal subcutaneous obesity (ASO) and burst abdomen in patients undergoing emergency midline laparotomy.

Methods: We conducted a single-center, retrospective, matched case-control study of patients undergoing emergency midline laparotomy from May 2016 to August 2021. Patients suffering from burst abdomen were matched 1:4 with controls based on age and sex. Abdominal wall closure was standard-ized in the study period with the small bites, small stitches technique. ASO was defined as the highest sex-specific quartile ($\geq 75\%$) of subcutaneous fat-layer evaluated on CT. The primary outcome was the association between ASO and burst abdomen, stratified between cases and controls. Secondary outcomes included 30- and 90-day mortality, length of stay, and suspected risk factors of burst abdomen, assessed by multivariate analysis across cases and controls.

Results: A total of 475 patients were included in this study, with 95 cases matched to 380 controls. Liver cirrhosis, active smoking, and high alcohol consumption were more common among cases in an unadjusted analysis. Liver cirrhosis (odds ratio (OR) 3.32; $p = 0.045$) and active smoking (OR 1.98; $p = 0.009$) remained significant in a multivariate analysis and were associated with burst abdomen. 124 patients had ASO. ASO was not significantly associated with burst abdomen (OR 1.11; $p = 0.731$).

Conclusion: ASO was not found to be associated with an increased risk of burst abdomen after emergency midline laparotomy.

B27 Magdalena Hansson

Abstract title	Maternal pre-existing and gestational diabetes, and the prevalence of septal defects in the offspring
Presenter	Magdalena Hansson
Title	MD, PhD student
If PhD, year of defence	
Affiliation	Herlev Hospital, Department of Cardiology, Herlev, Denmark
E-mail	vera.magdalena.hansson.01@regionh.dk
Authors and affiliations	M. Hansson, Herlev Hospital, Department of Cardiology. S. Dannesbo, Rigshospitalet, Department of Cardiology. R.O.B Vøgg, Herlev Hospital, Department of Cardiology. A.M. Dehn, Rigshospitalet, Department of Cardiothoracic Surgery. C. Pihl, Herlev Hospital, Department of Cardiology. A-S Sillesen, Herlev Hospital, Department of Cardiology. A. Axelsson Raja, Rigshospitalet, Department of Cardiology. K. Iversen, Herlev Hospital, Department of Cardiology. H. Bundgaard, Rigshospitalet, Department of Cardiology.

Abstract text – limited to 250 words

BACKGROUND:

Maternal pre-existing (T1DM and T2DM) and gestational diabetes (GDM) affect approximately 6% of all pregnancies in Denmark and are well known risk factors for congenital heart disease (CHD). The association between the two has previously been studied, however, there is a lack of larger clinical studies with systematic transthoracic echocardiography (TTE) of the new-borns.

PURPOSE:

To assess the prevalence of atrial and ventricular septal defects (ASD and VSD) by systematic TTE in new-borns of mothers with pre-existing or gestational diabetes and compare with the prevalence among new-borns of mothers without diabetes.

METHOD:

The study is based on the population-based Copenhagen Baby Heart Study (CBHS). Maternal gestational and pre-existing diabetes was defined by the diagnostic codes DO244 (GDM), DO240 (T1DM) and DO241(T2DM).

RESULTS:

Of the 28,503 new-borns included in CBHS, 24,918 met the inclusion criteria: Known diabetes status of the mother, and TTE of the new-born within 30 days of birth.

The entire cohort was examined for VSD, while ASD was validated in a sub cohort of 12,630 new-borns.

We found a significantly increased risk for ASD in the T1DM (RR 1.9, p= 0.038) and T2DM (RR 3.11, p= 0.002) groups. In the T1DM group there was also a significantly increased risk for perimembranous VSD (RR 6.94, p: 0.007).

CONCLUSION:

New-borns of mothers with T1DM had an increased risk of ASD and perimembranous VSD, and new-borns of mothers with T2DM had an increased risk of ASD. Gestational diabetes did not significantly

B28 Malene Hammer Hansen

Abstract title	Driving restrictions following implantation of an implantable cardioverter defibrillator (ICD) alter the recipients' ability to maintain employment and daily living
Presenter	Malene Hammer Hansen
Title	RN, Master of Science (MSc) in Health Science
If PhD, year of defence	
Affiliation	Department of Cardiology, Herlev-Gentofte Hospital
E-mail	malene.hammer.hansen.01@regionh.dk
Authors and affiliations	Malene Hammer Hansen, Trine Bernholdt Rasmussen, Morten Schou, Gunnar Gislason, Jenny Bjerre Ejstrup

Abstract text – limited to 250 words

Background and Purpose:

Following implantation of an implantable cardioverter defibrillator (ICD) patients are temporarily prohibited from driving privately and permanently prohibited from driving professionally. Driving restrictions can alter the recipients' ability to maintain employment and daily living.

Methods:

To investigate Danish ICD recipients' perspectives on driving restrictions following ICD implantation, a specifically developed and validated questionnaire were distributed to all living ICD patients with a first-time implantation between 2013 and 2016 (n=3913). Questionnaire responses were linked with data from relevant nationwide Danish registers.

Results:

Response rate was 71% (n=2741) (83% male, median age 67 years), 92% (n=2513) held a private driver's license and 7% (n=175) were actively using a professional driver's license at time of implantation. Among those with a driving ban of at least 1 month (n=911), 26% stated the restrictions had severely impeded their daily living, more in the professional drivers group compared with the private drivers (32% vs 24%, p=0.01). Including only patients working prior to implantation (n=465), 47% stated they were very or somewhat limited in maintaining employment due to the driving restrictions. Likewise, 42% were very or somewhat limited in getting to and from their job. Among the active professional drivers (n=175), 34% (n=56) stated they had lost their job as a direct consequence of the professional driving ban.

Conclusion:

Both a professional and private driving ban following ICD implantation affect the ability to maintain employment and have a negative impact on the recipients' daily living. Rehabilitation programs should focus on these challenges.

B29 Marie Louise Jensen

Abstract title	Previous rotator cuff repair increases the risk of revision surgery for periprosthetic joint infection after reverse shoulder arthroplasty
Presenter	Marie Louise Jensen
Title	MD
If PhD, year of defence	
Affiliation	Herlev and Gentofte Hospital
E-mail	marie.louise.jensen.02@regionh.dk
Authors and affiliations	Marie L Jensen, Herlev and Gentofte Hospital. Steen L Jensen, Aalborg University Hospital, Farsø. Matthijs Bolder, Odense University Hospital, Odense. Klaus WJ Hanisch, Hospital South West Jutland, Esbjerg. Anne Kathrine B Sørensen, Herlev and Gentofte Hospital. Bo S Olsen, Herlev and Gentofte Hospital. Thomas Falstie-Jensen, Aarhus University Hospital, Aarhus. Jeppe V Rasmussen, Herlev and Gentofte Hospital.

Abstract text – limited to 250 words

Introduction

The purpose was to determine the risk of infection for patients with previous rotator cuff repair compared to patients with no previous surgery and report the rates of revision due to infection after reverse shoulder arthroplasty for cuff tear arthropathy or osteoarthritis.

Methods

Data was retrieved from the Danish Shoulder Arthroplasty Registry and medical records. 2,217 patients who had reverse shoulder arthroplasty for cuff tear arthropathy or osteoarthritis between 2006 and 2019 were included. Infection was defined as at least 3 out of 5 tissue samples positive for the same bacteria or as definite or probable periprosthetic joint infection evaluated from the International Consensus Meeting. The Kaplan-Meier method was used to illustrate the unadjusted 14-year cumulative rates. Cox regression model was used to report hazard ratios adjusted for previous non-arthroplasty surgery, gender, diagnosis, and age.

Results

Revision was performed in 88 (4.0%) shoulders of which 40 (1.8%) were due to infection. There were 272 (12.3%) patients who had previous rotator cuff repair of which 11 (4.0%) were revised due to infection. The 14-year cumulative rate of revision due to infection for patients with previous rotator cuff repair was 14.1% and for patients without previous surgery it was 2.7%. The adjusted hazard ratio for revision due to infection for patients with previous rotator cuff repair was 2.2 (95% CI 1.04 to 4.60) compared to patients without previous surgery.

Conclusion

There is an increased risk of revision due to infection after reverse shoulder arthroplasty for patients with previous rotator cuff repair.

B30 Marie-Louise Thorseth

Abstract title	Knockout of Collagen Type I Impedes Tumor Growth and Supports Immune Cell Infiltration in a Murine Model of Pancreatic Cancer
Presenter	Marie-Louise Thorseth
Title	MSc, PhD
If PhD, year of defence	2022
Affiliation	National Center for Cancer Immune Therapy, Department of Oncology
E-mail	marie-louise.thorseth@regionh.dk
Authors and affiliations	M-L Thorseth ¹ , M Carretta ¹ , AMA Rømer ¹ , C Jensen ² , DE Kuczek ¹ , AZ Johansen ¹ , KY Fjæstad ¹ , N Willumsen ² , MH Andersen ^{1,3} , DH Madsen ^{1,3} 1) National Center for Cancer Immune Therapy, Department of Oncology, Copenhagen University Hospital – Herlev & Gentofte, Herlev. 2) Biomarkers and Research, Nordic Bioscience, Herlev. 3) Department of Immunology & Microbiology, University of Copenhagen, Copenhagen.

Abstract text – limited to 250 words

Introduction: A characteristic of cancer progression is remodeling of the extracellular matrix (ECM). This results in a tumor-specific ECM which is often of high density and rich in collagen. The high collagen density correlates with a poor prognosis in many types of cancer and with low immune cell-infiltration. The direct effects of increased collagen on tumor progression are not yet fully understood. In this study, the role of collagen on tumor growth and immune cell infiltration were directly investigated using transgenic murine models allowing for manipulation of collagen levels.

Methods:

Transgenic murine models were used to study the effects of collagen type I (col1); a conditional knockout model with decreased collagen deposition and a collagenase-resistant model with increased collagen deposition. Changes in the level of col1 and the effects on immune cell infiltration were demonstrated using qRT-PCR, ELISA, histological stainings and flow cytometry.

Results:

In the knockout model, col1 expression and deposition were decreased and growth of Pan02 carcinomas was impeded. This was accompanied by increased infiltration of immune effector cells and an increased CD8/CD4 ratio. These results were backed up by employing the collagenase-resistant model with increased collagen deposition. In these mice, tumor growth was increased and there was a higher CD4/CD8 ratio.

Conclusion:

The results of this study demonstrate pronounced effects of collagen on tumor progression and on the tumor immune microenvironment. The potential immunosuppressive role of col1 provides a rationale for extending future research in cancer immunotherapy to include focus on the ECM and in particular col1.

C31 Mario Presti

Abstract title	Acquired resistance to immune checkpoint inhibitors via progressive T-cell immune escape
Presenter	Mario Presti
Title	MD
If PhD, year of defence	
Affiliation	National Center for Cancer Immune Therapy, Oncology Department
E-mail	mario.presti.01@regionh.dk
Authors and affiliations	M Presti (1), M. Nielsen(1), Z. Sztupinszki(1,2), A. W. P. Jensen(1), A. Draghi(1), C. A. Chamberlain(1), A. Schina(1), C. W. Yde(3), J. Wojcik(4), Z. Szallasi(2), M. D. Crowther(1), I. M. Svane(1), and M. Donia(1) - (1)National Center for Cancer Immune Therapy, Oncology Department, Herlev Hospital; (2)Danish Cancer Society Research Center; (3)Center for Genomic Medicine, Rigshospitalet Copenhagen; (4)Translational Pathology, Bristol-Myers Squibb.

Abstract text – limited to 250 words

Introduction

Acquired resistance to immunotherapy (ARI) represents a major issue in modern oncology. Understanding immune escape in ARI may uncover novel treatment opportunities.

Material and methods

We analyzed longitudinal biopsies of a patient with anti-PD1 resistant melanoma who responded and progressed to anti-PD-1 plus anti-lymphocyte-activation gene 3 (LAG-3) antibodies. From each biopsy, tumor cell lines (TCLs, TCL1 – baseline; TCL2 – response; TCL3 – progression) were established and tumor-infiltrating lymphocytes (TILs) were isolated to conduct functional assays. Genomic and immunohistochemistry analyses were performed to validate the in vitro findings.

Results and discussion

CD8+ (TILs) recognized and killed TCL1 and TCL2, but not TCL3. Further analysis showed that TCL3 lost surface expression of Major Histocompatibility Complex class I (MHC-I), due to a nonsense mutation in the beta-2-microglobulin gene (B2M) coupled with loss of heterozygosity. Lentiviral transduction of B2M in the TCL3 restored CD8+ TIL-mediated killing, showing that B2M-negative cells had been positively selected by CD8+ TIL-mediated immunoediting.

In a subclone of TCL3, a co-existing Janus Kinase 1 (JAK1) signaling defect was identified. This determined resistance to Interferon-gamma (IFN γ), resulting in decreased CD4+ TIL recognition and IFN γ -mediated cytotoxicity. Lentiviral transduction of JAK1 in TCL3 restored IFN γ sensitivity and CD4+ TIL-mediated killing, confirming JAK1 signaling loss as the final step of the immune escape, required to completely suppress T cell-mediated antitumor immunity.

Conclusion

These findings highlight the complex dynamics of ARI. Simultaneously targeting diverse co-existing alterations may be necessary to achieve durable clinical responses in the post-PD1 setting and re-establish CD8 and CD4 T cell recognition.

C32 Mathias Elsner Melgaard

Abstract title	Virus-specific Airway Immune Response in Early Life is Associated with Childhood Asthma
Presenter	Mathias Elsner Melgaard
Title	MD, PhD student
If PhD, year of defence	
Affiliation	COPSAC, Herlev Børne- og Ungeafdeling E
E-mail	mathias.melgaard@dbac.dk
Authors and affiliations	Mathias E. Melgaard ¹ , Bo L. Chawes ¹ , Signe K. Jensen ¹ , Jakob Stokholm ^{1 2} , , Susanne Brix ³ , Anders Eliassen ^{1 3} , Casper-Emil T. Pedersen ¹ , Hans Bisgaard ¹ , Klaus Bønnelykke ¹ ¹ :COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark, ² : Department of Pediatrics, Slagelse Sygehus, Slagelse, Denmark. ³ : Department of Health Technology, Section for Bioinformatics, Technical University of Denmark, Kgs. Lyngby, Denmark

Abstract text – limited to 250 words

Introduction: To investigate in situ virus-specific differences in upper airway immune mediator levels during episodes with asthma-like symptoms and the association with later development of asthma.

Methods: We included 493 asthma-like episodes in 277 children aged 0-4 years from the COPSAC2010 mother-child cohort. Levels of 18 different immune mediators were assessed in nasal epithelial lining fluid and were compared between children with and without viral PCR-identification (nasopharyngeal sample). The analysis was repeated to examine the between-virus (RSV and RV) differences in the levels. Finally, we investigated whether the virally triggered immune response was associated with the development of asthma.

Results: Viral detection during asthma-like symptoms were associated with upregulation of several Th1 and Treg immune mediators, including IFN-g, TNF-a, CCL4, CXCL10 and IL-10, and downregulation of Th2 and Th17 immune mediators, including CCL13, CCL26 and CXCL8 ($p < 0.05$). RSV-positive children had upregulation of IFN-g and TNF-a and downregulation of CCL4 ($p < 0.05$). Conversely, RV-positive children had upregulation of CCL4 and IL-5 ($p < 0.05$) and downregulation of TNF-a compared to other viral pathogens. Increased levels of CCL4 and CXCL10 ($p < 0.05$) and decreased levels of IFN-g, IL-10 and IL-2 ($p < 0.05$) during viral episodes were associated with asthma risk by age six years.

Conclusion: We demonstrated a virus-specific airway immune mediator profile during asthma-like episodes in early childhood. Furthermore, an aberrant immune profile during viral-triggered episodes was associated with later asthma development, providing a potential mechanistic clue to the virus-asthma relationship.

C33 Mette Marie Olsen Nørregaard

Abstract title	Impact of Maternal Risk Factors on the Structure and Function of the Heart in Newborns
Presenter	Mette Marie Olsen Nørregaard
Title	Student
If PhD, year of defence	
Affiliation	Kardiologisk forskningsenhed 2, Herlev Hospital
E-mail	Mette.Marie.Olsen.Noerregaard@regionh.dk
Authors and affiliations	Mette Marie Olsen Nørregaard, Herlev Hospital, ROB Vøgg, Herlev Hospital, S Basit, Statens Serum Institut, AA Raja, Rigshospitalet, AS Sillesen, Herlev Hospital, FS Jørgensen, Hvidovre Hospital, H Boyd, Statens Serum Institut, KK Iversen, Herlev Hospital, H Bundgaard, Rigshospitalet.

Abstract text – limited to 250 words

Introduction

Maternal obesity, advanced age and smoking during pregnancy are associated with an increased risk of congenital heart defects in the offspring. This study investigates whether these maternal factors may also impact the newborn heart in more subtle ways, affecting left ventricular (LV) structure and function.

Methods

Infants enrolled in the Copenhagen Baby Heart Study, who were born to term and who underwent a transthoracic echocardiography within 60 days of birth were included in the study population. The infants were divided into three main groups based on maternal exposure variables: Maternal body mass index (BMI), maternal age, and maternal smoking status during pregnancy. Outcomes were LV parameters ascertained from 2D-echocardiographic images in the parasternal long axis view. The LV parameters were compared within the main exposure groups by use of a linear mixed model.

Results

Infants born to women who had a BMI ≥ 25 kg/m² tended to have smaller LV diameters and volumes compared to infants to women with a BMI between 18.5-24.9 kg/m². Infants born to women who were ≥ 40 years of age had smaller LV internal diameters and volumes compared to women who were 30-34 years of age. Infants to women who smoked during pregnancy had lower heart rates compared to infants born to non-smoking women.

Conclusion

Our results suggest that the investigated maternal factors do impact the LV structure and function of the newborn. The long-term consequences of these findings are unknown. Current follow-up studies may reveal if the observed differences are still sustained today.

C34 Mia Østergaard Johansen

Abstract title	From plasma triglycerides to triglyceride metabolism in mortality: the Copenhagen General Population Study
Presenter	Mia Østergaard Johansen
Title	MD, PhD student
If PhD, year of defence	
Affiliation	Department of Clinical Biochemistry, Herlev and Gentofte Hospital
E-mail	mia.oestergaard.johansen.01@regionh.dk
Authors and affiliations	Mia Ø. Johansen(1), Shoaib Afzal(1), Signe Vedel-Krogh(1), Sune F. Nielsen(1), George Davey Smith(2), Børge G. Nordestgaard(1). 1) Department of Clinical Biochemistry, The Copenhagen General Population Study, Herlev and Gentofte Hospital, and University of Copenhagen. 2) MRC Integrative Epidemiology Unit (IEU), Bristol Medical School, University of Bristol, United Kingdom.

Abstract text – limited to 250 words

Introduction: It is unclear whether higher triglyceride metabolism per se contributes to mortality separate from elevated triglyceride-rich lipoproteins and body mass index. This study tested the hypotheses that higher triglyceride metabolism, measured as higher plasma glycerol and β -hydroxybutyrate, is associated with increased all-cause, cardiovascular, cancer, and other mortality.

Methods: This study included 30,000 individuals nested within 109,751 individuals from the Copenhagen General Population Study. During a median follow-up of 10.7 years, 9,897 individuals died, while none were lost to follow-up.

Results: In individuals with glycerol >80 $\mu\text{mol/L}$ (highest fourth) versus individuals with glycerol <52 $\mu\text{mol/L}$ (lowest fourth), the multivariable adjusted hazard ratio for all-cause mortality was 1.34 (95% confidence interval: 1.25–1.43). In individuals with β -hydroxybutyrate >154 $\mu\text{mol/L}$ (highest fourth) versus individuals with β -hydroxybutyrate <91 $\mu\text{mol/L}$ (lowest fourth), the multivariable adjusted hazard ratio for all-cause mortality was 1.19 (1.12–1.27). Corresponding values for higher plasma glycerol and β -hydroxybutyrate were 1.41 (1.22–1.62) and 1.18 (1.04–1.35) for cardiovascular mortality, 1.24 (1.11–1.39) and 1.15 (1.04–1.27) for cancer mortality, and 1.50 (1.32–1.70) and 1.27 (1.13–1.42) for other mortality, respectively. Results were robust to stratification for 13 risk factors for mortality, including for plasma triglycerides and body mass index.

Conclusion: This study observed increased risk of all-cause, cardiovascular, cancer, and other mortality with higher triglyceride metabolism. This was not explained by higher plasma triglycerides and body mass index.

C35 Mie Liljendahl

Abstract title	Development and internal validation of a diagnostic prediction model for psoriasis severity
Presenter	Mie Sylow Liljendahl
Title	MSc
If PhD, year of defence	
Affiliation	Department of Dermatology and Allergy, Herlev and Gentofte Hospital
E-mail	mie.sylow.liljendahl@regionh.dk
Authors and affiliations	Mie Sylow Liljendahl ^{1,2} ; Nikolai Loft ¹ ; Alexander Egeberg ² ; Lone Skov ¹ ; Tri-Long Nguyen ³ . ¹ Department of Dermatology and Allergy, Herlev and Gentofte Hospital, Gentofte Hospitalsvej 15, 2900 Hellerup, University of Copenhagen. ² Department of Dermatology and Venereology, Bispebjerg and Frederiksberg Hospital, University of Copenhagen, Denmark. ³ Section of Epidemiology, Department of Public Health, University of Copenhagen, Denmark

Abstract text – limited to 250 words

Introduction: While administrative health records such as national registries may be useful data sources to study the epidemiology of psoriasis, they do not generally contain information on disease severity. The objective of the present study was to develop and validate a diagnostic model to distinguish psoriasis severity based on administrative register data.

Method: We conducted a retrospective registry-based cohort study using the Danish Skin Cohort linked with the Danish national registries. We developed a diagnostic model using a gradient boosting machine learning technique to predict moderate-to-severe psoriasis. We performed an internal validation of the model by bootstrapping to account for any optimism.

Results: Among 4,016 adult psoriasis patients (55.8% women, mean age 59 years) included in this study, 1,212 (30.2%) patients were identified as having moderate-to-severe psoriasis. The diagnostic prediction model yielded a correct discrimination performance: c-statistic equal to 0.73 [95% CI: 0.71 – 0.74]. The internal validation by bootstrap correction showed no substantial optimism in the results with a c-statistic of 0.72 [95% CI: 0.70 – 0.74]. A bootstrap-corrected slope of 1.10 [95% CI: 1.07 – 1.13] indicated a slight under-fitting.

Conclusion: Based on register data, we developed a gradient boosting diagnostic model returning acceptable prediction of patient with moderate-to-severe psoriasis. This model allow one to identify the group of patients with moderate-to-severe psoriasis in the national registries and estimate patients who are candidates for systemic therapy but not receiving this treatment

C36 Mikkel Byrdal

Abstract title	Therapeutic targeting of cellular components of the Tumor Microenvironment as a treatment strategy in cancer
Presenter	Mikkel Byrdal
Title	M.Sc. in Molecular Biomedicine
If PhD, year of defence	
Affiliation	Research Assistant at Center for Cancer Immune Therapy, Herlev Hosp.
E-mail	mikkel.byrdal@regionh.dk
Authors and affiliations	Klaire Yixin, Center for Cancer Immune Therapy, Herlev Hospital Daniel Hargbøl Madsen, Center for Cancer Immune Therapy, Herlev Hospital Marco Carratero, Center for Cancer Immune Therapy, Herlev Hospital

Abstract text – limited to 250 words

Introduction:

The tumor microenvironment(TME) is a network of cells and structural components in the close proximity of tumors. Consisting of diverse elements such as immune cells, blood vessels, fibroblasts and matrix proteins, the TME can both be supportive of cancer growth and immune suppressive, or it can assert anti-tumorigenic functions. In recent years, the importance of the TME has been elucidated, both as a prognostic marker and in determining the efficacy of treatments such as immune checkpoint inhibitors.

Although the TME composition is different for different cancer types, the ability to manipulate the TME may present attractive treatment options across cancers, as well as in treating individual cancer types. In this project, manipulation of the cellular components of the TME, specifically depletion of monocytes and neutrophils, is investigated as treatment of different cancer types.

Methods:

Syngeneic mouse models are utilized to assess effect of treatments on tumor size. Flow cytometry is used to analyze TME composition. A transgene mouse strain is used for monocyte depletion.

Results:

The data we have produced indicates that specific ablation of monocytes reduces tumor growth as a stand-alone treatment, as well as enhances treatment efficiency of immune checkpoint inhibitor treatments. In addition, neutrophil depletion in combination with monocyte depletion also appears to enhance treatment efficiency.

Conclusion:

These results indicate that the TME can be used as therapeutic targets in cancer treatment, which would open up for a variety of both new drug development and repurposing of already approved drugs to manipulate the TME.

C37 Monika Rubin

Abstract title	A survey of healthcare professionals' perspectives regarding family presence during resuscitation in Denmark.
Presenter	Monika Rubin
Title	Md, PhD student
If PhD, year of defence	
Affiliation	Department of Anaesthesiology and Herlev ACES
E-mail	monika@monikarubin.dk
Authors and affiliations	Monika Rubin ¹ , Natasha Langer ² , Thordis Thomsen ¹ , Peter Dieckmann ^{3,4} , Ann Merete Møller ¹ ¹ Department of Anaesthesiology and Herlev ACES, Herlev Hospital ² Department of Anaesthesiology, Bispebjerg Hospital ³ Copenhagen Academy of Medical Education and Simulation (CAMES) ⁴ Department of Quality and Health Technology, Faculty of Health Sciences, University in Stavanger, Norway

Abstract text – limited to 250 words

Background:

Healthcare professionals (HCP) do not entirely support family presence during resuscitation (FPDR). Compared to nurses, physicians are more likely to feel that the risks outweigh the benefits of FPDR. The aim of this survey was to assess the perspectives of HCP on FPDR among those working in the emergency department (ED) in Denmark. Our primary outcome was to explore differences between nurses/physicians in their response to the question "Family members should be given the option to be present when a loved one is being resuscitated".

Methods:

An anonymous electronic survey was distributed to nurses/physicians in the ED. The survey included a previously validated survey-based risk-benefit scale of 22-items, measuring HCP perceptions of FPDR using a 5-point Likert scale together with demographic items. The original risk-benefit scale was translated and validated into Danish before use.

Results:

A total of 151 clinicians answered the survey (34% nurses - 66% physicians) with a median age of 36-40 years. 62% had >6 years of experience. Only 4% had not experienced FPDR. More nurses agreed to our primary outcome (p-value 0,0127), and that FPDR was a right of patients and families (corrected p-value 0,0004). The nurses also agreed more with the statement that FPDR is a right that patients and relatives should have.

Conclusion:

Nurses are more likely to agree that "Family members should be given the option to be present when a loved one is being resuscitated" than physicians which could lead to affected team collaboration in relation to FPDR involvement.

C38 Morten Jon Andersen

Abstract title	Is MRI without sedation or anesthesia feasible in children with fractures around the elbow?
Presenter	Morten Jon Andersen
Title	Consultant orthopedic surgeon
If PhD, year of defence	
Affiliation	Department of Orthopedic Surgery - Herlev and Gentofte
E-mail	morten.jon.andersen@regionh.dk
Authors and affiliations	Morten Jon Andersen Department of Orthopedic Surgery - Herlev and Gentofte

Abstract text – limited to 250 words

INTRODUCTION

Diagnosis of fractures around the child elbow is complicated by radiographic inability to show the extent of the injuries into unossified bone. MRI can clearly show fractures in the immature skeleton. To overcome the need for sedation or anesthesia we use a Child Centered Care (CCC) approach. The CCC consists of information about MRI, movies, apps, pediatric radiographers and a child-friendly environment. The aim was to investigate if MRI without sedation or anesthesia was feasible in children with fractures around the elbow.

METHODS

MRIs are stored in the hospital's Picture Archiving System (PACS). We searched the system for elbow MRIs in children aged 3-15 at Herlev Hospital from 1.1.2020 to 28.2.2022. Scans eligible for inclusion had to be ordered to investigate a fracture or a suspicion of a fracture.

RESULTS

The search yielded 31 MRIs. 12 scans were excluded. 19 MRIs in 19 children met inclusion criteria. The children aged 3-13 (mean 7) and included two 3-year-olds and four 4-year-olds. 18 (95%) scans could be completed to a point where the images were useful for radiological description. One (5%) scan did not produce usable images in a 3-year-old boy due to anxiety. 9 (47%) scans produced images of good quality without movement artefacts. The quality of the remaining 9 (47%) scans was acceptable.

CONCLUSION

The use of MRI without sedation or anesthesia to investigate fractures around the elbow seems very feasible even in younger children. However, it is important to prepare the child and parent's thoroughly to avoid anxiety.

C39 Nanna Marie Christoffersen

Abstract title	Increased risk of stress-urinary-incontinence surgery after hysterectomy – a population-based cohort study
Presenter	Nanna Marie Christoffersen
Title	stud.med
If PhD, year of defence	
Affiliation	Department of Obstetrics and Gynecology, Herlev and Gentofte University Hospital + Faculty of Health and Medical Sciences, Copenhagen University
E-mail	nannamariemchristoffersen@gmail.com
Authors and affiliations	Niels Klarskov (Department of Obstetrics and Gynecology, Herlev and Gentofte University Hospital + Faculty of Health and Medical Sciences, Copenhagen University) Kim Oren Gradel (Center for Clinical Epidemiology, Odense University Hospital + Research Unit of Epidemiology, University of Southern Denmark) Karen Ruben Husby (Department of Obstetrics and Gynecology, Herlev and Gentofte University Hospital + Faculty of Health and Medical Sciences, Copenhagen University)

Abstract text – limited to 250 words Introduction: The association between hysterectomy and stress urinary incontinence (SUI) has previously been established. SUI can be treated surgically and options have improved after introduction of the tension-free vaginal tape procedure in 1998. We aimed to estimate the risk of SUI surgery after hysterectomy for benign indication other than pelvic organ prolapse, in a contemporary context.

Methods: We did a matched register-based cohort study including Danish women born 1947–2000. Hysterectomized women were matched to non-hysterectomized women 1:5 based on age and calendar year of hysterectomy. The risk of SUI surgery after hysterectomy was calculated. The joint effect of hysterectomy and parity was calculated in the main cohort and joint effects of hysterectomy and vaginal birth or cesarean section in a subcohort of women who only had one mode of delivery. Calculations were made using Cox proportional hazard model.

Results: We included 83,370 hysterectomized women and 413,969 reference women. The overall risk of SUI surgery was almost tripled for hysterectomized women (hazard ratio 2.7; CI 95% 2.5-2.9). We found a trend of increased risk of SUI surgery with increasing parity in both groups. The hazard ratio was 15.1 (CI 95% 10.3-22.1) for hysterectomized women with one vaginal birth while the hazard ratio for reference women with one vaginal birth was 5.1 (CI 95% 3.8-8.1).

Conclusion: This study signifies that hysterectomy increases the risk of subsequent SUI surgery. Women should be informed and gynecologists include this knowledge in decision-making. Further precautions should be taken when treating parous women.

C40 Nicklas Juel Spindler

Abstract title	Early toxicity after stereotactic ablative radiotherapy of oligometastatic bone metastases in the BONY M phase II trial
Presenter	Nicklas Juel Spindler
Title	MD, PhD student
If PhD, year of defence	NA
Affiliation	Dept. of Onocology, Radiotherapy Unit
E-mail	nicklas.juel.spindler@regionh.dk
Authors and affiliations	Nicklas Juel Spindler 1, Mette Felter 1, O Hansen 2, TB Nielsen 2, MH Suppli 3, M Josipovic 3, LØ Poulsen 4, F Gaard-Petersen 1, H Sand 4, T Abramova 5, M Johansen 5, J Kornerup 6, M Alsaker 6, E Serup-Hansen 1, P Geertsen 1, IR Vogelius 3, Claus Behrens 1, Gitte F. Persson 1 1) HGH 2) OUH, 3) RH, 4) AaUH, 5) Ålesund-Norway, 6) Skt. Olavs-Norway

Abstract text – limited to 250 words

Purpose

Stereotactic ablative radiotherapy (SABR) of bone metastases provides a high tumor control rate and spare the normal tissue, but the true risk of treatment-related toxicity is underreported. This is the initial report of early toxicity, quality of life, and pain-response within 12 weeks from the phase II trial BONY-M.

Material/methods

Patients were recruited at six centers in Denmark and Norway. Eligible patients had oligometastatic disease with up to five metastatic lesions from a solid tumor, including at least one bone metastasis, and all metastatic sites must be treated with ablative intent. SABR was delivered as 37.5 or 30 Gray in three fractions to the bone metastasis. The primary endpoint was the 1-year local control rate. Secondary endpoints include toxicity (CTCAE v.5.0), pain-response, quality of life (EuroQol EQ-5D-5L), and survival.

Results

The BONY-M trial recruited 67 patients in two years and closed in January 2022. The median age was 66 years and 57% were male. In total, 77 bone metastases were treated with SABR. We observed two Grade 3 CTCAE treatment-related adverse events (3%, 95% CI: 0.4 - 10%): one vertebra compression fracture requiring surgery and one urinary urge incontinence. No study-related Grade 4 treatment-related adverse events or deaths were observed. Quality of life remained unchanged in general. Complete/partial pain-response was observed in 11 out of 22 evaluable patients with initial painful bone metastases (50%).

Conclusions

Early toxicity after SABR of oligometastatic bone metastases is acceptable with a stable quality-of-life score and an appropriate pain response.

C41 Niklas Lorentsson

Abstract title	The impact of a glucose load on the IFN- γ -release test for latent tuberculosis – a preliminary analysis
Presenter	Hans Johan Niklas Lorentsson
Title	MD
If PhD, year of defence	
Affiliation	1,3,4 (see below)
E-mail	hans.johan.niklas.lorentsson.02@regionh.dk
Authors and affiliations	Niklas Lorentsson ^{1,3,4} , Daniel Faurholt-Jepsen ² , Katrine Bagge Hansen ³ , Pernille Ravn ¹ . 1: Department of Medicine, Unit of Infectious Diseases, Copenhagen University Hospital, Herlev-Gentofte Hospital, Hellerup, Denmark. 2: Department of Infectious Diseases, Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark 3: Steno Diabetes Centre Copenhagen, Gentofte, Denmark 4: Center for Clinical Metabolic Research, Herlev-Gentofte Hospital

Abstract text – limited to 250 words

Title:

The impact of a glucose load on the IFN- γ -release test for latent tuberculosis – a preliminary analysis

Introduction:

To diagnose latent tuberculosis, whole blood is mixed with Mycobacterium tuberculosis-specific peptides and the release of IFN- γ is measured. Glucose fluctuations can modulate cytokine expression and the IFN- γ -release test for latent tuberculosis could therefore be compromised by alterations in blood glucose. Our aim is to investigate if the IFN- γ -release test for latent tuberculosis is affected during an oral glucose load.

Methods:

Persons infected with M.tuberculosis were invited to a standard oral glucose tolerance test. Blood sampling was performed at -15, 60-, 90-, 120- and 240-minutes post ingestion. IFN- γ -production was analysed at 3 timepoints: 1. pre-ingestion (-15-min) 2. peak-glucose (highest glucose at 60, 90 or 120-min) and 3. post-ingestion (240-min). Linear-mixed-model analysis was used to test difference in means for IFN- γ at all 3 timepoints.

Preliminary results:

12 tests had measurable IFN- γ at all time-points. Mean blood glucose levels for timepoint 1 (pre-ingestion), 2 (peak-glucose) and 3 (post-ingestion) were: 5.69 95%CI (4.83-6.56), 11.29 (8.66-13.92) and 4.18 mmol/L (3.44-4.92). Mean IFN- γ for Tb1-nil were: 1.87 95%CI (0.85-2.90), 2.46 (0.72-4.20) and 2.68 IU/mL (0.66-4.70). Mean IFN- γ for Tb2-nil were: 2.24 95%CI (0.73-3.74), 2.35 (0.53-4.18) and 2.85 IU/mL (1.02-4.67). Linear-mixed-model analysis did not show any difference in means for IFN- γ at all 3 timepoints and no correlation was observed between glucose levels and IFN- γ .

Conclusion:

Preliminary data suggest that glucose intake does not affect the reliability of the IFN- γ -release test for latent tuberculosis.

C42 Nils Hoyer

Abstract title	Diagnostic delay in IPF impacts progression-free survival, quality of life and hospitalisation rates
Presenter	Nils Hoyer
Title	MD, PhD
If PhD, year of defence	2019
Affiliation	Department of Respiratory Medicine
E-mail	nils.hoyer@regionh.dk
Authors and affiliations	Nils Hoyer*1,2, Thomas Skovhus Prior3, Elisabeth Bendstrup3, Saher Burhan Shaker1 1 Department of Respiratory Medicine, Bispebjerg and Frederiksberg Hospital, Copenhagen, Denmark 2 Department of Respiratory Medicine, Herlev and Gentofte Hospital, Hellerup, Denmark 3 Centre for Rare Lung Diseases, Department of Respiratory Diseases and Allergy, Aarhus University Hospital, Aarhus, Denmark

Abstract text – limited to 250 words

Background

The diagnosis of idiopathic pulmonary fibrosis (IPF) is often delayed up to several years. The objective of this study was to assess the impact of a diagnostic delay on progression-free survival, quality of life and hospitalisation rate.

Methods

Patients with IPF were included immediately after diagnosis and followed for up to five years with collection of clinical data, St. George's Respiratory Questionnaire (SGRQ) and hospitalisation data. Disease progression was defined as decline in FVC > 10% or decline in DLCO > 15%.

Results

Among 264 included patients, a diagnostic delay > 1 year was associated with worse progression-free survival compared with a diagnostic delay < 1 year (HR: 1.70, 95% CI: 1.18–2.46, $p = 0.004$), most notably in patients with FVC > 80% predicted at diagnosis (HR: 2.43, 95% CI: 1.45–4.01, $p < 0.001$). Mean total scores of SGRQ were consistently higher in patients with longer delay, indicating worse quality of life.

Mean hospitalisation rates were higher during the first year after diagnosis (IRR: 3.28, 95% CI: 1.35–8.55, $p = 0.01$) and during the entire follow-up (IRR: 1.74, 95% CI: 1.01–3.02, $p = 0.04$).

Conclusion

A diagnostic delay of more than one year negatively impacts progression-free survival, quality of life and hospitalisation rates in patients with IPF. These findings further support the importance of an early diagnosis for proper management of IPF.

C43 Nina Strandkjær

Abstract title	A randomized clinical trial of population and sex-specific troponin cutoffs for ruling out acute myocardial infarction - The Danish Study of Sex and Population-specific Cutoffs of Troponin (DANSPOT)
Presenter	Rasmus Bo Hasselbalch
Title	MD, PhD-student
If PhD, year of defence	
Affiliation	S104, kardiologisk forskningsenhed 2, Herlev Hospital
E-mail	nina.strandkjaer.01@regionh.dk
Authors and affiliations	Strandkjær N (1), Hasselbalch RB(1), Jørgensen N(1), Kristensen JH(1), Ostrowski SR(2), Pedersen OBV(3), Torp-Pedersen C(4), Bor V(5), Kamstrup PR(6), Dahl M(7), Hilsted LM(8), Bundgaard H(9), Iversen KK(1) (1)Department of Cardiology, Herlev-Gentofte Hospital, Denmark, (2)Department of Clinical Immunology, Rigshospitalet, Denmark, (3)Department of Clinical Immunology, Zealand University Hospital, Denmark, (4)Department of Cardiology, North Zealand University Hospital, Denmark, (5)Department of Clinical Biochemistry, Hospital South West Jutland, Denmark, (6)Department of Clinical Biochemistry, Herlev-Gentofte Hospital, Denmark, (7)Department of Clinical Biochemistry, Zealand University Hospital, Denmark, (8)Department of Clinical Biochemistry, Rigshospitalet, Denmark

Abstract text – limited to 250 words

Background Sex-uniform 99th percentiles of cardiac troponin (cTn) - determined from measurements in healthy reference populations - is used at Danish hospitals as a diagnostic cutoff for acute myocardial infarction (MI) for both men and women. Although, men have twofold the cTn level compared to women, suggesting that the use of uniform 99th percentiles may lead to the under-diagnostic of acute MI in women and potentially over-diagnostic in men.

Aim To evaluate the clinical effect on diagnosis, treatment and outcomes in men and women presenting with acute MI of implementing guidelines recommended sex-specific 99th percentiles of cTn into clinical practice.

Methods Sex-specific 99th percentiles of cTn were determined using blood samples from Danish blood donors, analyzed at five different cTn assays. The study is performed as a nationwide cluster-randomized trial with “stepped-wedge” design with 22 participating centers. Introduction of the new sex-specific 99th percentiles started on April 1st, 2022, with inclusion of a new center monthly. Patients are followed up in Danish registries for 12 months after index admission. The primary endpoint is a composite of MI, unplanned revascularization, and all-cause mortality within 12 months from index admission and is calculated for women and men separately with maximal cTn levels between the new and the current 99th percentile.

Perspective The clinical significance of sex-specific 99th percentiles of cTn is poorly known. We expect to detect more women with acute MI, improving diagnostic and treatment of women. Also, we expect to detect fewer men, reducing unnecessary examinations and treatment among men.

C44 Pernille B. Nielsen

Abstract title	Clinical assessment as a part of an early warning score—a Danish cluster-randomised, multicentre study of an Individual Early Warning Score (I-EWS)
Presenter	Pernille B. Nielsen
Title	MD, Ph.d. student
If PhD, year of defence	
Affiliation	Dept. of Emergency Medicine & Dept of Cardiology, Herlev Hospital
E-mail	pernille.brok.nielsen@regionh.dk
Authors and affiliations	Martin Schultz, HGH, Caroline S Langkjær, NOH, Anne Marie Kodal, NOH, Niels E. Pedersen, SUH, John Asger Petersen, AHH, Theis Lange, CSS, Michael D. Arvig, SLA, Christian S. Meyhoff, BFH, Morten Bestle, NOH, Bibi Hølge-Hazelton, SUH, Gitte Bunkenborg, HOL, Anne Lippert, CAMES, Ove Andersen, AHH, Lars Simon Rasmussen, RH, Kasper Iversen HGH

Abstract text – limited to 250 words

Introduction

The clinical benefit of Early Warning Scores (EWS) is undocumented. Nursing staff's clinical assessment might improve prediction of outcomes and allow more efficient use of resources. We aimed to investigate whether the combination of clinical assessment and EWS would reduce the number of routine measurements without increasing mortality.

Method

A cluster-randomised, crossover, non-inferiority study was performed at eight hospitals. Patients 18 years or older, and admitted ≥ 24 h were included. Hospitals were randomly assigned 1:1 to start as either intervention or control with subsequent crossover. Primary outcomes were 30-day all-cause mortality (non-inferiority margin=0.5%) and average number of scorings per day per patient. The intervention was implementation of I-EWS, in which nursing staff can adjust the score based on their clinical assessment and compared to the National Early Warning Score (NEWS).

Results

From Oct 15, 2018 to Sept 30, 2019, 90 964 patients were assessed. N=46 470 were assigned to the I-EWS group and N=44 494 to the NEWS group. Mortality within 30 days was 4.6% for the I-EWS group, and 4.3% for the NEWS group (aOR 1.05 [95% CI 0.99–1.12], $p=0.12$). Overall risk difference was 0.22% (95% CI -0.04 to 0.48) meaning that the non-inferiority criteria were met. The average number of scorings per patient per day was reduced with 0.64% [95% CI -0.16 to -1.11], $p=0.0084$) in the I-EWS group.

Conclusion

Including clinical assessment in I-EWS was feasible and overall non-inferior to NEWS in terms of all-cause mortality at 30 days, and the number of routine measurements was minimally reduced.

C45 Peter Kamstrup

Abstract title	Biomarkers of Clot Activation and Degradation, and Risk of Future Major Cardiovascular Events in Acute Exacerbation of COPD: A Cohort Sub-Study in a Randomized Trial Population
Presenter	Peter Kamstrup
Title	MD
If PhD, year of defence	
Affiliation	Section of Respiratory Medicine, Department of Medicine, Copenhagen University Hospital-Herlev and Gentofte
E-mail	peter.kamstrup@regionh.dk
Authors and affiliations	Peter Kamstrup 1,†, Jannie Marie Bülow Sand 2,†, Charlotte Suppli Ulrik 3,4, Julie Janner 3, Christian Philip Rønn 1, Sarah Rank Rønnow 2, Diana Julie Leeming 2, Sidse Graff Jensen 1, Torgny Wilcke 1,4, Alexander G. Mathioudakis 5,6, Marc Miravittles 7, Therese Lapperre 8,9, Elisabeth Bendstrup 10,11, Ruth Frikke-Schmidt 4,12, Daniel D. Murray 13, Theis Itenov 13, Apostolos Bossios 14,15, Susanne Dam Nielsen 4,15,16, Jørgen Vestbo 5,6, Tor Biering-Sørensen 16,17,18, Morten Karsdal 2, Jens-Ulrik Jensen 1,4,13,† and Pradeesh Sivapalan 1,† 1 Section of Respiratory Medicine, Department of Medicine, Copenhagen University Hospital-Herlev and Gentofte, 2900 Hellerup, Denmark; 2 Nordic Bioscience A/S, 2730 Herlev, Denmark; 3 Department of Respiratory Medicine, Copenhagen University Hospital-Hvidovre, 2650 Hvidovre, Denmark; 4 Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, 2200 Copenhagen, Denmark; 5 The North West Lung Centre, Wythenshawe Hospital, Manchester University NHS Foundation

Abstract text – limited to 250 words

Introduction

Cardiovascular diseases are common in patients with chronic obstructive pulmonary disease (COPD). Clot formation and resolution secondary to systemic inflammation may be a part of the explanation. The aim was to determine whether biomarkers of clot formation (products of von Willebrand Factor formation and activation) and clot resolution (product of fibrin degeneration) during COPD exacerbation predicted major cardiovascular events (MACE).

Methods

The cohort was based on clinical data and biobank plasma samples from a trial including patients admitted with an acute exacerbation of COPD (CORTICO-COP). Neo-epitope biomarkers of formation and the activation of von Willebrand factor (VWF-N and V-WFA, respectively) and cross-linked fibrin degradation (X-FIB) were assessed using ELISAs in EDTA plasma at the time of acute admission, and analyzed for time-to-first MACE within 36 months, using multivariable Cox proportional hazards models.

Results

In total, 299/318 participants had samples available for analysis. The risk of MACE for patients in the upper quartile of each biomarker versus the lower quartile was: X-FIB: HR 0.98 (95% CI 0.65–1.48), VWF-N: HR 1.56 (95% CI 1.07–2.27), and VWF-A: HR 0.78 (95% CI 0.52–1.16).

Conclusion

In conclusion, in COPD patients with an acute exacerbation, VWF-N was associated with future MACE and warrants further studies in a larger population.

C46 Pia Aehnlich

Abstract title	V γ 9V δ 2 T cell metabolism – key to a successful new adoptive cell therapy for cancer?
Presenter	Pia Aehnlich
Title	M.Sc.
If PhD, year of defence	
Affiliation	National Center for Cancer Immune Therapy, Department of Oncology
E-mail	pia.aehnlich@regionh.dk
Authors and affiliations	Pia Aehnlich (1), Marta Velasco Santiago (1), Gitte Holmen Olofsson (1), Claus Desler (2), Per thor Straten (1,3) (1) National Center for Cancer Immune Therapy, Dept. of Oncology (2) Center for Healthy Aging, University of Copenhagen (3) Dept. of Immunology and Microbiology, University of Copenhagen

Abstract text – limited to 250 words

Introduction

Cancer immunotherapy has become an important part of oncological therapy; however, it is still limited by patient eligibility for treatment and relapses due to tumor escape. Adoptive cell therapy with gamma delta T cells, specifically the V γ 9V δ 2 subset, could circumvent these challenges, since these cells are broadly tumor-specific and easily expandable in vitro. First clinical studies yielded few anti-tumor effects, which might be due to a suboptimal expansion protocol. We investigate the metabolism of V γ 9V δ 2 T cells to improve expansion and pre-cultivation protocols for adoptive cell therapy.

Methods

We expanded V γ 9V δ 2 T cells from human PBMCs in vitro and measured live cell metabolism with the Seahorse technology. Moreover, we employed specific metabolic inhibitors to investigate the relevance of certain metabolic pathways on cell expansion and cancer cell killing.

Results

Preliminary results indicate a rather robust metabolism of gamma delta T cells, dependent more on glucose metabolism than on mitochondrial respiration, as measured with the Seahorse flux analyzer. Inhibiting glycolysis and pentose phosphate pathways with high doses of 2-deoxyglucose and 6-aminonicotinamide, respectively, slowed proliferation of gamma delta T cells. Manipulation of the mitochondria with FCCP had no effect, neither on proliferation nor cancer cell killing.

Conclusion

Understanding the metabolism of V γ 9V δ 2 T cells might pave the way to a novel adoptive cell therapy for cancer patients. Expansion protocols could be optimized by adding or restricting certain nutrients, leading to gamma delta T cells with increased effectiveness upon infusion into the patient.

D47 Rasmus Bo Hasselbalch

Abstract title	The impact of age on cardiac troponin
Presenter	Rasmus Bo Hasselbalch
Title	MD
If PhD, year of defence	
Affiliation	Department of emergency medicine
E-mail	rasmus.bo.hasselbalch@regionh.dk
Authors and affiliations	RB Hasselbalch 1, N Strandkjær 1, J Kristensen 1, S Ostrowski 2, O Vesterager Pedersen 3, S Afzal 4, P Kamstrup 4, H Bundgaard 5, K Iversen 1 - 1) Department of Emergency Medicine Herlev-Gentofte Hospital, 2) Department of Clinical Immunology Rigshospitalet, 3) Department of Clinical Immunology, Zealand University Hospital 4) Department of Clinical Biochemistry Herlev-Gentofte Hospital, 5) Department of Cardiology Rigdhospitaler

Abstract text – limited to 250 words

Introduction

The 99th percentile upper reference limit (URL) of cardiac troponin (cTn) among healthy individuals is the diagnostic cutoff for myocardial infarction. Our aim was to determine the effect of age on the URL of cTn for the Danish population.

Methods

We invited active and retired blood donors with the aim of including 250 participants of each sex in each of four age groups, <50, 50-60, 60-70 and >70 years, for a total of about 2000 participants. cTn levels were measured by 4 cTn assays (Siemens Atellica and Vista cTnI, Roche cTnT and Abbott Alinity cTnI). Quantile regression for the 99th percentile was adjusted for sex and creatinine concentration.

Results

A total of 2,216 participants were included with a median age of 59 (IQR 48-70), and 53% were female. There was a significant increase in cTn with age for all assays (all $p < 0.001$). In quantile regression age was only significantly associated with the 99th percentile of cTnT (0.4 ng/L increase per year, $p < 0.001$). The URL for cTnT increased from 16 ng/L (90% CI 12-34 ng/L) for participants <50 years to 38 ng/L (90% CI 35-42 ng/L) for participants >70 years.

The proportion of participants with concentrations above the manufacturer's URL increased with age for cTnT from 1.4% in participants <50 years to 22.5% for participants >70 years ($p < 0.001$).

Conclusion

The concentration of cTn increased with age for all assays. This was clearest for cTnT, for which guidelines should consider age stratified URL.

D48 Rikke Bjersand Sunde

Abstract title	Endotyping Childhood Asthma by Bacterial Airway Colonization in Neonates
Presenter	Rikke Bjersand Sunde
Title	PhD Student
If PhD, year of defence	2023
Affiliation	COPSAC/Herlev og Gentofte Hospital
E-mail	rikke.sunde@dbac.dk
Authors and affiliations	Rikke Bjersand Sunde, MD1,2; Jonathan Thorsen, MD, PhD1; Ann-Marie Malby Schoos, MD, PhD1,2; Jakob Stokholm, MD, PhD1,2,3; Klaus Bønnelykke, MD, PhD1; Bo Chawes, MD, PhD, DMSc1; Hans Bisgaard, MD, DMSc1 1) COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Herlev and Gentofte Hospital, University of Copenhagen, Denmark 2) Department of Pediatrics, Slagelse Hospital, Slagelse, Denmark 3) Section of Microbiology and Fermentation, Department of Food Science, University of Copenhagen, Frederiksberg C, Denmark

Abstract text – limited to 250 words

Introduction

We previously showed association between neonatal bacterial airway colonization and increased risk of asthma until age 5 years, suggesting an airway bacteria colonization-associated childhood asthma endotype. Here we report the 18 years trajectory of such endotype.

Methods

We investigated association between airway colonization with *S. pneumoniae*, *H. influenzae*, and/or *M. catarrhalis* in one-month-old neonates from the COPSAC2000 mother-child cohort and development of asthma diagnoses by the study physicians longitudinally until age 18.

Results

Neonatal airway colonization was present in 66 (21%) of 319 children and was associated with a 4-fold increased risk of asthma (adjusted odds ratio, 4.01 (95% CI, 1.76-9.12, $p < 0.001$)) and increased number of exacerbations (adjusted incidence rate ratio, 3.20 (1.38-7.44, $0 < 0.01$)) until age 7, but not from age 7 to 18 years. In colonized children, blood eosinophils were increased until age 12 (adjusted geometric mean ratio, 1.24 (1.06-1.44), $p < 0.01$), but not at age 18 years. There were no associations with lung function, bronchial reactivity, FeNO, allergic sensitization, total-IgE or atopic dermatitis.

Conclusion

Neonatal airway colonization was associated with a particular childhood asthma endotype characterized by early-onset, exacerbations, and elevated blood eosinophils, which was most prominent in early childhood, thereafter diminishing, and no longer evident by age 18. This endotype may be one factor explaining that the prevalence of childhood asthma peaks in pre-school age and decline through school-age.

D49 Sara Fresnillo Saló

Abstract title	Characterization of CD4+ T cell responses against Rho C, a metastasis associated tumor antigen
Presenter	Sara Fresnillo Saló
Title	Master Student
If PhD, year of defence	
Affiliation	Department of Oncology, National Center for Cancer Immune Therapy
E-mail	sara.fresnillo.salo@regionh.dk
Authors and affiliations	Sara Fresnillo Saló ¹ , Anne Rahbech ¹ , Sara Ram Pedersen ¹ , Per thor Straten ^{1,2} . 1 Department of Oncology, National Center for Cancer Immune Therapy (CCIT-DK), Herlev University Hospital, Herlev, Denmark. 2 Department of Immunology and Microbiology, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark

Abstract text – limited to 250 words

INTRODUCTION

While direct tumor killing has been mainly associated to CD8+ T cells, studies in pre-clinical and clinical contexts have described cytotoxic CD4+ T cells with that same potential. CD4+ T cells are often induced in high frequency in therapeutic vaccination against cancer. Recently, vaccination with a RhoC derived long-synthetic peptide (RV001) induced a long-lasting CD4+ T cell response in prostate cancer patients. We aimed to in vitro mimic vaccine-induced RV001 specific CD4+ T cells and test their capacity to kill cancer cells expressing their cognate antigen.

METHODS

T cells were obtained from peripheral blood from a healthy donor and stimulated with peptide pulsed autologous dendritic cells or PBMCs. Cells were tested for peptide reactivity using EliSpot and intracellular staining after each stimulation. Peptide specific CD4+ T cells were sorted based on cytokine secretion and cloned by limiting dilution. Cytotoxic potential of expanded specific clones was tested in an xCELLigence Real-Time Cell Analysis.

RESULTS

We established peptide-specific CD4+ T cell clones all of which showed cytotoxicity against peptide-pulsed FM3 melanoma cells. CD4+ T cell clones produced TNF α , IFN γ , granzyme B and granulysin following peptide stimulation. Work is in progress to characterize if endogenous peptides derived from RhoC protein are presented on HLA class II molecules in cancer cells.

CONCLUSIONS

Despite CD4+ T cells being conventionally thought of as mainly “help providers” in anti-cancer immune responses, we demonstrated they also possess cytotoxic potential, underlying the importance of further characterizing CD4+ responses as they could lead to better vaccination strategies.

D50 Sidsel Christy Lindgaard

Abstract title	Prognostic value of circulating proteins in patients undergoing surgery for pancreatic cancer
Presenter	Sidsel Christy Lindgaard
Title	MD
If PhD, year of defence	Thesis submitted, to be defended in November 2022.
Affiliation	Dept. of Oncology
E-mail	sidsel.christy.lindgaard@regionh.dk
Authors and affiliations	Sidsel C. Lindgaard; Zsófia Sztupinszki; Emil Maag; Carsten P. Hansen; Inna M. Chen; Astrid Z. Johansen; Jane P. Hasselby; Stig E. Bojesen; Dorte Nielsen; Julia S. Johansen Unfortunately there was not enough room to fill out the affiliations.

Abstract text – limited to 250 words

Background: Pancreatic ductal adenocarcinoma (PDAC) is the fourth leading cause of cancer death. Less than 20% of patients are diagnosed with resectable disease. Identifying truly resectable disease is challenging because 20–40% of the patients subjected to resection are found to have advanced disease during surgery. The aim of our study was to identify panels of circulating proteins that could be used to distinguish patients with unresectable PDAC from patients with resectable PDAC and to identify prognostic signatures for both groups.

Methods: We measured 92 circulating immuno-oncology-related proteins using the proximity extension assay from Olink Proteomics in 273 patients eligible for surgery for PDAC. Two bioinformaticians worked independently of one another on the same data. LASSO and Ridge regression were used in the statistical analyses.

Results: One protein index for determining resectability had an AUC value of 0.66. Several indices for prognosis had AUC values between 0.50 and 0.75 and were therefore not better than existing prognostic markers.

Conclusion: Our study did not reveal any new high-performing protein panels that could be used to identify patients with inoperable PDAC before surgery. The panel of 92 proteins investigated has previously been found to be applicable for diagnostic use in patients with PDAC, but it does not seem to warrant further investigation regarding resectability in the subgroup of patients with PDAC referred to surgery.

D51 Signe Eekholm

Abstract title	Implementation of evidence-based nursing care for hospital patients with Community Acquired Pneumonia; Design, development, and evaluation of an implementation strategy
Presenter	Signe Eekholm
Title	Postdoc
If PhD, year of defence	2022
Affiliation	PhD, MSc, RN
E-mail	signe.eekholm@regionh.dk
Authors and affiliations	Karin Samuelson (Associate Professor, PhD, MScN, RNANIC) Gerd Ahlström (Senior professor, PhD, RN) Jimmie Kristensson (Associate Professor, Senior Lecturer, PhD) Tove Lindhardt (Seniorresearcher, PhD, RN)

Abstract text – limited to 250 words

Introduction: Insufficient nursing care is a major threat to patients with community-acquired pneumonia (CAP) safety. Despite the development of evidence-based guidelines (EBGs) guiding the delivery of high-quality and effective nursing care, research presents an inadequate implementation of EBGs in clinical practice. The overall aim of the thesis was to determine a tailored theory- and research-based strategy to implement EBGs for nursing care of older patients admitted with CAP in a hospital setting.

Methods: A descriptive cross-sectional study (Study I) identified gaps between current practice and EBG recommendations for the diagnostics, treatment, and care of CAP. An ethnographic study (Study II) explored determinants influencing registered nurses' (RNs) adherence to EBGs. In Studies III and IV, a tailored theory- and research-based strategy for implementing evidence-based nursing care (EBNC) was designed, developed, and evaluated.

Results: A few potentially serious gaps in diagnostic procedures and medical treatment, but several gaps in nursing care. RNs' adherence to EBGs was heavily influenced by the RNs' professional identity and contextual barriers, such as the dominance of the biomedical model, the team-related hierarchy, and the organisational structures. The nurse manager was a key facilitator for mediating a changed hierarchical culture and the performance of EBNC. The developed strategy consisted of multiple interventions targeting individual, team, and environmental determinants, and a structured programme for implementation. The strategy was found to be acceptable, appropriate, and feasible for implementing EBNC

Conclusion: The tailored theory- and research-based strategy appeared feasible for changing determinants influencing nursing practice and improving patient care.

D52 Signe Stelling Risom

Abstract title	A Systematic Literature Review of the Effect of Mind-Body Interventions on Mental Health Among Patients with Atrial Fibrillation.
Presenter	Signe Risom
Title	Nurse and Senior Researcher
If PhD, year of defence	2015
Affiliation	Department of cardiology, Herlev and Gentofte University Hospital
E-mail	signe.stelling.risom@regionh.dk
Authors and affiliations	Jennie Brask Augsborg 1, Misbah Inam Dar 1, Kathryn Wood 2, Trine Bernholdt Rasmussen 1, 3, Signe Stelling Risom 1, 3, 4, 5 1: Health and medical sciences, University of Copenhagen. 2: Nell Hodgson Woodruff School of Nursing, Emory University, USA 3: Department of Cardiology, Herlev and Gentofte University Hospital. 4: Institute of Nursing and Nutrition, University College Copenhagen. 5: Faculty of Health and Medical Sciences, Copenhagen University

Abstract text – limited to 250 words

Background: Living with atrial fibrillation (AF) has a negative impact on patients' mental health, including their emotional, psychological and social well-being. This decrease in mental health can result in increased anxiety and worsening of physical symptoms demonstrating a mind-body connection. Mind-body interventions (MBIs) e.g., yoga, relaxation and some variants of cognitive behavioral therapy (CBT) are based on the perspective that mental and physical health affect each other, which is why MBIs potentially can have a positive effect on anxiety and poor mental health among patients with AF.

Aim: To investigate whether MBIs have an effect on mental health outcomes in adults with AF.

Method: We conducted a systematic review searching PubMed, Embase, Cochrane and CINAHL. The primary outcomes were mental health including anxiety. Secondary outcomes included health related quality of life (HRQoL) and physical factors.

Results: Five randomized clinical trials (three Swedish, one Chinese, one American) were included with a total of 431 participants. Interventions included two variants of CBT in two studies, yoga in two, and a resiliency training Program in one study. Yoga and CBT had a positive effect on mental health. CBT and a Relaxation Response Resiliency Program had no effect on anxiety. A positive effect of CBT on HRQoL and depression were found in all studies and on blood pressure and heart rate in one yoga study.

Conclusion: This review indicates that MBIs have a positive effect on mental health in patients with AF with no specific effects noted on anxiety. More research is needed.

D53 Simone Møller Hansen

Abstract title	Nutritional gap when transferring from the ICU to general wards – a retrospective study
Presenter	Simone Møller Hansen
Title	Clinical Dietician
If PhD, year of defence	
Affiliation	The Dietitians and Nutritional Research Unit, EATEN, HGH
E-mail	simone.moeller.hansen@regionh.dk
Authors and affiliations	Simone M. Hansen^{1,2}, Anne W. Knudsen¹, Tina Munk¹, Heidi Knudsen², Thordis Thomsen^{2,3} ¹ The Dietitians and Nutritional Research Unit, EATEN, HGH ² Department of Anaesthesiology, HGH ³ Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark

Abstract text – limited to 250 words

Introduction: Adequate nutrition is important for recovery after critical illness. Our knowledge of patients' nutritional intake after ICU discharge is however scarce. Therefore, we aimed to explore nutritional planning and intake in ICU patients who transfer from the ICU to regular wards.

Methods: A retrospective, quality-assurance study. Inclusion criteria: adult ICU patients (admitted ≥ 2 days) transferring to a regular ward at Copenhagen University Hospital-Herlev from May-August 2021. Data collection from patient charts and analysis using descriptive statistics. Primary outcome: Having a nutritional plan on the day of ICU transfer. A nutritional plan was defined by assessment of nutritional requirement, energy- and protein coverage, type of diet. If using enteral or parenteral nutrition the prescribed doses, and product. Secondary outcomes: coverage of energy and protein requirements from 1 day before to 3 days after ICU transfer.

Results: We included 57 patients; mean age 64 years; 75% males; median ICU stay 6 days. Five (9%) patients had a nutritional plan. Patients' median energy and protein coverage declined from the day before to the day after ICU discharge; energy and protein coverage declined from 94% to 30.5%, ($p=0.0051$) and 73% to 27.5%, ($p=0.0117$), respectively. Energy and protein coverage remained unchanged from day one to three after ICU transfer.

Conclusions: Few patients had a documented nutritional plan on the day of ICU transfer. Patients' nutritional coverage remained insufficiently during the three days after ICU transfer. Interventions focusing on optimized nutritional care and documentation thereof in patients transferring from the ICU to general wards are needed.

D54 Siri Henriksen

Abstract title	Varying negative appendectomy rate after laparoscopic appendectomy – a systematic review and meta-analysis
Presenter	Siri Rønholdt Henriksen
Title	Student
If PhD, year of defence	
Affiliation	Centre for Perioperative Optimisation, Department of Surgery, Herlev Hospital
E-mail	siri.roenholdt.henriksen@regionh.dk
Authors and affiliations	Siri Rønholdt Henriksen, Camilla Christophersen, Jacob Rosenberg, Siv Fonnes, Centre for Perioperative Optimisation, Department of Surgery, Herlev Hospital

Abstract text – limited to 250 words

Introduction: Appendicitis is a common cause of acute abdominal pain, and treatment with laparoscopy has become increasingly common during the past two decades. Guidelines recommend that normal appendices are removed if operated for suspected acute appendicitis. It is unclear how many patients are affected by this recommendation. The aim of this study was to estimate the rate of negative appendectomies in patients undergoing laparoscopic surgery for suspected acute appendicitis.

Materials and Methods: This study was reported following the PRISMA 2020 statement. A systematic search was conducted in PubMed and Embase for retrospective or prospective cohort studies (with $n \geq 100$) including patients with suspected acute appendicitis. The primary outcome was the histopathologically confirmed negative appendectomy rate after a laparoscopic approach with 95% confidence interval (CI). We performed subgroup analyses on geographical region, age, sex, and use of preoperative imaging or scoring systems. Risk of bias was assessed using the Newcastle-Ottawa Scale. Certainty of the evidence was assessed using GRADE.

Results: In total, 74 studies were identified through the systematic search, summing up to 76,688 patients undergoing laparoscopic surgery. The negative appendectomy rate varied from 0% to 46% in the included studies. The meta-analysis estimated the negative appendectomy rate to 13% (95% CI 12–14%) but with large variations between the individual studies. Sensitivity analyses did not change the estimate. Certainty of evidence by GRADE was moderate.

Conclusion: The overall estimated negative appendectomy rate after laparoscopic surgery was 13% and certainty of evidence was moderate. The negative appendectomy rate varied greatly between studies.

D55 Sofie Bay Simony

Abstract title	Statin use and reduced STEMI relative to non-STEMI: a nationwide study in Denmark
Presenter	Sofie Bay Simony
Title	MD, PhD student
If PhD, year of defence	
Affiliation	Department of Clinical Biochemistry, Herlev and Gentofte Hospital
E-mail	sofie.bay.simony@regionh.dk
Authors and affiliations	Anne Langsted, Department of Clinical Biochemistry, Herlev and Gentofte Hospital Martin Bødtker Mortensen, Department of Cardiology, Aarhus University Hospital Børge Nordestgaard, Department of Clinical Biochemistry, Herlev and Gentofte Hospital Shoaib Afzal, Depart. of Clinical Biochemistry, Herlev Gentofte Hosp.

Abstract text – limited to 250 words

Introduction: In recent decades the use of statin therapy for atherosclerotic cardiovascular disease (ASCVD) prevention has increased substantially in most high-income countries and constitutes the cornerstone for preventing ASCVD in all major guidelines. Myocardial infarction occurs due to plaque rupture in the coronary arteries and is often classified in two subtypes: ST-elevation myocardial infarction (STEMI) and non-ST-elevation myocardial infarction (non-STEMI). Statin therapy has been shown to profoundly change plaque morphology in the coronary arteries and may thereby reduce the number of myocardial infarctions as well as affect the relative distribution between STEMI and non-STEMI events. We tested the hypothesis that statin use is associated with reduced STEMI relative to non-STEMI in patients, who suffer from first-time myocardial infarction.

Methods: We performed a nationwide study in Denmark and included all patients who suffered from a first-time myocardial infarction between 2010 and 2018 (n=72,727). We investigated the relative risk of STEMI versus non-STEMI events.

Results: The odds ratio for getting a STEMI versus a non-STEMI was 0.72(0.69-0.76) in current statin users, and 0.92(0.86-0.99) in previous statin users with never users as reference. For individuals with different intensity of daily statin dose the odds ratio for getting a STEMI versus non-STEMI was 0.85(0.80-0.90) in low statin dose, 0.68(0.64-0.72) in regular statin dose, and 0.60(0.54-0.68) in high statin dose using never users as reference.

Conclusion: Statin use is associated with reduced STEMI relative to non-STEMI in a dose dependent manner.

D56 Sofie Dannesbo

Abstract title	Patency of neonatally identified interatrial communications in young children
Presenter	Sofie Dannesbo
Title	MD
If PhD, year of defence	
Affiliation	Department of Cardiology, Herlev Hospital
E-mail	sofie.dannesbo.01@regionh.dk
Authors and affiliations	S. Dannesbo (1,2), A. M. Dehn (1), R. O. B. Voegg (2), H. Boyd (3), F. S. Jorgensen (4), V. Hjortdal (1), A. Sillesen (2), A. Axelsson Raja (1), N. Vejstrup (1), K. Iversen (2), H. Bundgaard (1) (1) Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark (2) Copenhagen University Hospital, Herlev-Gentofte, Copenhagen, Denmark, (3) Statens Serum Institut, Copenhagen, Denmark, (4) Copenhagen University Hospital, Hvidovre, Copenhagen, Denmark

Abstract text – limited to 250 words

Introduction

Atrial septal defects (ASDs) of the secundum type are some of the most common cardiac abnormalities. However, in newborns, ASDs are challenging to distinguish from normal physiological interatrial communications (IACs) within the oval fossa, i.e. patency of the oval foramen (PFO). On this basis, an algorithm for classification of neonatal IACs identified using transthoracic echocardiography was recently developed. In the present study we investigated the patency of neonatally identified IACs categorized by the algorithm as ASDs or PFOs in young children.

Methods

Children, who had an IAC detected during the first month after birth through participation in the Copenhagen Baby Heart Study, were offered a follow-up echocardiogram at 4-5 years of age. The neonatally identified IACs were categorized as either PFO or ASD according to the algorithm. The follow-up echocardiograms were assessed for patency of an IAC by a single operator blinded to the neonatal IAC subtype.

Results

Currently, 103 children (median age 4.5 [interquartile range 4.4-4.7] years, 63% female) have been examined. Neonatally, the IACs were classified as ASDs in 45 newborns and PFOs in 58 newborns. The follow-up echocardiogram showed patency of the IAC in 17 of the children with an ASD (38%) and in 11 of the children with PFO (19%), ($p=0.033$). We aim to examine a total of 1,200 children.

Conclusion

These preliminary findings showed significantly higher patency of neonatal ASDs versus neonatal PFOs in children examined at 4-5 years of age. This finding supports the potential value of the novel diagnostic algorithm.

D57 Susanne Boel

Abstract title	The predictiv value of disability at 2 weeks after surgery of distal radius fractures: a prospectiv cohort study
Presenter	Susanne Boel
Title	Occupational Therapist, MSc, PhD-student
If PhD, year of defence	
Affiliation	Department of Physiotherapi and Occupational Therapy
E-mail	susanne.boel.01@regionh.dk
Authors and affiliations	Susanne Boel (1), Birgitta Rosén (2), Carsten Bogh Juhl (1,3) 1) Department of Physiotherapy and Occupational Therapy, Herlev og Gentofte Hospital, Denmark, 2) Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark, 3) Department of Translational Medicine, Hand Surgery, Lund University, Sweden

Abstract text – **limited to 250 words**

Introduction

Most patients recover well after surgery of a distal radius fracture. Despite 47% the patients experience disability at 1 year and these patients may benefit from early initiated supervised rehabilitation. Which patients to offer supervised rehabilitation is most often based on range of motion or oedema, but the patients' perspective should also be considered. We investigated whether self-reported disability, pain, and performance of activities 2 weeks post-surgery of a distal radius fracture could predict disability at 6 months.

Methods

Adult patients having surgery with a volar locking plate at Gentofte Hospital were included consecutively. At 2 weeks and 6 months post-surgery the patients scored the Disability of the Arm, Shoulder and Hand (DASH) for disability, a visual analogue scale for pain and the Canadian Occupational Performance Measure (COPM) for performance of daily activities.

A 6-month DASH-score of ≥ 11 indicated disability. Receiver operating characteristic (ROC) curves, likelihood ratios and positive and negative predictive values for experiencing disability were calculated.

Results

A total of 101 patients were included. DASH was the best predictor of 6 months disability and a 2-week cut-off score of 50 was identified. Likelihood ratios for positive ($LR+ = 2.19$) and negative ($LR- = 0.48$) testing showed a small ability to predict disability. The positive predictive value was 65% and the negative predictive value was 71% for experiencing disability at 6 months.

Conclusion

The 2-week DASH cut-off score may be used in clinical settings for predicting disability at 6 months, although the predictive value is weak.

D58 Søren Perregaard

Abstract title	Complications after volar locking plate fixation of distal radius fractures
Presenter	Søren Perregaard, Stud.med
Title	Complications after volar locking plate fixation of distal radius fractures: a retrospective study in 822 patients.
If PhD, year of defence	
Affiliation	Department of orthopaedic surgery, hand surgical department, Gentofte Hospital Copenhagen, Denmark.
E-mail	s.perregaard@gmail.com
Authors and affiliations	Marcus Landgren and Rasmus Wejnold Jørgensen

Abstract text – limited to 250 words**Introduction**

With the current routine use of volar locking plates as the preferred surgical treatment of distal radius fractures the purpose of this study was to investigate the incidence of postoperative complications following surgery. Secondly, to investigate the correlation between demographic factors and the risk of complications.

Methods

We retrospectively reviewed all patients surgically treated for a distal radius fracture with open reduction and internal fixation using volar plating and screws during a three year period. Relevant demography and all postoperative complications attributable to the surgical treatment of the 822 patients eligible for inclusion were recorded with a mean follow-up time of 2.8 years.

Results

We identified an overall complication rate of 14.2% (116 in 822 patients). With 8.2% defined as major complications and 6.0% defined as minor complications. The most frequently observed complications were pain and reduced ROM leading to hardware removal (n=23, 2.8%), wound related problems without the need for surgical revision (n=18, 2.2%), and carpal tunnel syndrome (n=16, 1.9%). Binary logistic regression modelling showed no significant correlation between demographic factors and the risk of complications ($p > 0.05$ for all parameters).

Conclusion

In conclusion, 8% of patients experience a major complication and 6% of patients experience a minor complication following open reduction and internal fixation using volar plating of distal radius fractures. Age, gender, time from trauma to surgery, and fracture type are not associated with an increased risk of postoperative complications.

Word count: 245

D59 Thilde Olivia Kock

Abstract title	Left ventricular non-compaction in childhood: echocardiographic follow-up and prevalence in first-degree relatives
Presenter	Thilde Olivia Kock
Title	BSc(Med)
If PhD, year of defence	
Affiliation	Kardiologisk afdeling S
E-mail	thilde.olivia.kock@regionh.dk
Authors and affiliations	Marie Fagerlund Boerresen, Kardiologisk afdeling S; Anne-sophie Sillesen, Kardiologisk afdeling S; Ottilia Voegg, Kardiologisk afdeling S; Jakob Boesgaard Norsk, Kardiologisk afdeling S; Maria Munk Munk Paerregaard, Kardiologisk afdeling S; Niels G Vejstrup, Hjertemedicinsk klinik B; Alex Christensen, Kardiologisk afdeling S; Kasper Iversen, Kardiologisk afdeling S; Henning Bundgaard, Hjertemedicinsk klinik B; Anna Axelsson Raja, Hjertemedicinsk klinik B.

Abstract text – limited to 250 words

Introduction

Left ventricular non-compaction (LVNC) is characterized by excessive trabeculations of the left ventricular (LV) wall and may be associated with reduced systolic function. We aimed to describe the echocardiographic development of LV function and pattern in children with LVNC, compared to matched controls. Additionally, we aimed to describe the prevalence of LVNC in first-degree relatives.

Methods

Echocardiography was performed in children diagnosed with LVNC neonatally in Copenhagen Baby Heart Study, matched controls and first-degree relatives. LVNC was defined as a ratio of non-compact to compact myocardium of ≥ 2 in ≥ 1 LV segment.

Results

13 of 16 children diagnosed with LVNC neonatally (age 3 (IQR 3-4) years, 77% male), 52 controls (age 4 (IQR 3-4) years, 88% male), 36 first-degree relatives of children with LVNC (age 30 (IQR 4-37) years, 44% male) and 138 first-degree relatives to controls (age 33 (IQR 10-38) years, 50% male) were reevaluated. In probands, the trabeculation of segments (8% vs. 13%, $p=0.81$) and ejection fraction (EF) (50% vs. 48%, $p=0.66$) were unchanged from birth to follow-up. However, the EF was significantly reduced in probands compared to matched controls (48% vs. 60%, $p<0.001$). In first-degree relatives to probands, 10 of 36 (28%) fulfilled criteria of LVNC compared to none in the control group ($p<0.001$).

Conclusion

Children with LVNC diagnosed neonatally still had reduced systolic function when compared to controls but showed no further progression of LV dysfunction or extent of trabeculation at 2-4 years. In first-degree relatives to children with LVNC, 28% fulfilled criteria for LVNC.

D60 Thomas Helbo

Abstract title	Carriage of methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) in children <6 years old: A retrospective cohort study of the natural course and effectiveness of decolonisation treatment
Presenter	Thomas Helbo
Title	Student researcher
If PhD, year of defence	-
Affiliation	Department of Clinical Microbiology, Herlev and Gentofte Hospital
E-mail	thomas.helbo@regionh.dk
Authors and affiliations	Thomas Helbo (1), Jonas Bredtoft Boel (1,2), Mette Damkjær Bartels (3,4), Magnus Glindvad Ahlström (1), Barbara Juliane Holzknecht (1,4), Helle Brander Eriksen (1) ----- 1: Department of Clinical Microbiology, Herlev and Gentofte Hospital 2: The Hospital Pharmacy, Copenhagen University Hospital 3: Department of Clinical Microbiology, Amager and Hvidovre Hospital 4: Department of Clinical Medicine, University of Copenhagen

Abstract text – limited to 250 words

Introduction: The Danish Health Authority recommends decolonisation treatment of MRSA carriers and their households, except for children <2 years, for whom a wait-and-see approach has been recommended since 2012. We aimed to compare the natural history of MRSA colonisation and the effectiveness of decolonisation treatment in children <2 years or 2-5 years.

Methods: This retrospective cohort study included children <6 years with positive MRSA screening samples analysed at Herlev and Gentofte Hospital between 2007-2021. The probability of becoming MRSA free was investigated with univariate and multiple Cox regression analyses. Children were classified according to age (<2 or 2-5 years) and decolonisation treatment status. The multiple Cox regression models adjusted for sex, colonised screening sites, skin disorders, presence of the PVL gene, household size, household carriers, and whether the index sample was a clinical sample.

Results: We included 325 children, 204 who were <2 years and 121 who were 2-5 years. Univariate analyses showed no effect of decolonisation treatment in <2- or 2-5-year-olds, and the multiple regression models gave similar results (HR 0.82, 95 % CI 0.44-1.51 for <2-year-olds and HR 0.80, CI 0.38-1.70 for 2-5-year-olds). A univariate analysis showed higher rates of becoming MRSA free spontaneously for 2-5-year-olds than <2-year-olds, and we found a similar trend in the multiple regression analysis (HR 1.73, CI 0.90-3.30).

Conclusion: MRSA decolonisation treatment is not effective in children <6 years. Children 2-5 years become MRSA free at rates as least as high as <2-year-olds. A wait-and-see approach for 2-5-year-olds should therefore be considered.

D61 Thomas Hulen

Abstract title	Identifying Dark Antigen-Reactivity in Tumor-Infiltrating Lymphocytes from Patients with Metastatic Melanoma
Presenter	Thomas Morgan Hulen
Title	PhD Student
If PhD, year of defence	2024
Affiliation	University of Copenhagen
E-mail	thomasmorganhulen@regionh.dk
Authors and affiliations	Thomas Morgan Hulen(1), Michael Douglas Crowther(1), Shawez Khan(1), Aimilia Schina(1), Rachel Abbott(2), Hayden Selvadurai(2), Özcan Met(1), Inge Marie Svane(1) 1. National Center for Cancer Immune Therapy, Department of Oncology, Copenhagen University Hospital, Herlev, Denmark. 2. Enara Bio Ltd, The Magdalen Centre, Oxford Science Park, Oxford, United Kingdom

Abstract text – limited to 250 words

Introduction:

While adoptive cell therapy with tumor-infiltrating lymphocytes (ACT-based TIL) has been one of the most beneficial therapies for patients with metastatic melanoma, the tumor-specific targets that lead to tumor rejection remain largely elusive. Dark Antigens™ defined by Enara Bio are cancer-specific antigens consistent between individuals resulting from evolutionarily conserved retroviral elements that reside in non-coding regions of the human genome. Here we show that TILs derived from two melanoma patients react to a single Dark Antigen. From one patient, we have identified six unique T cell receptors (TCRs) which are currently being explored to identify the source of Dark Antigen-reactivity.

Methods:

Dark Antigen peptide stimulation of melanoma patient TILs in IFN γ -ELISpot was used to observe reactivity. RNA sequencing analysis confirmed presence of Dark Antigen transcripts in tumor cells. 10X Genomics single cell sequencing was used to identify TCR sequences of reactive TILs.

Results:

Out of 21 patients screened, TILs from two melanoma patients with overlapping HLA-types have shown to be reactive via IFN γ secretion to a common Dark Antigen. Single cell sequencing has allowed us to identify six candidate TCRs from one patient to further define the contributing factor of Dark Antigen-reactivity.

Conclusion:

We have shown that TIL-reactivity can be reflected in patients with Dark Antigen transcripts present in tumor tissue. TCR-transduction experiments are currently underway to identify which candidate TCRs mediate Dark Antigen-reactivity. These experiments help support the relevance of Dark Antigens in TIL therapy, as well as underline their therapeutic potential in the form of targeted immunotherapies.

D62 Thy Viet Luu

Abstract title	Impact of adrenaline on immune cell function: where exercise meets cancer immunotherapy
Presenter	Thy Viet Luu
Title	PhD student
If PhD, year of defence	
Affiliation	DK-CCIT, Department of Oncology, Herlev Hospital
E-mail	viet.thy.luu@regionh.dk
Authors and affiliations	Thy Viet Luu ¹ , Agnete Witness Praest Jensen ¹ , Gitte Holmen Olofsson ¹ and Per thor Straten ^{1,2} . ¹ National Center for Cancer Immune Therapy (DK-CCIT), Department of Oncology, University Hospital, DK-2730 Herlev, Denmark ² Department of Immunology and Microbiology, Faculty of Health and Medical Sciences, University of Copenhagen, DK-2200 Copenhagen, Denmark

Abstract text – limited to 250 words

Introduction

There is growing evidence suggesting that exercise reduces the risk of developing cancers and improves clinical outcomes in several cancers. Our group previously showed that voluntary exercise suppressed tumor growth in mouse models, associated with increased adrenaline level and mobilization of immune cells. However, the effect of adrenaline on immune cell functions remains unclear. In fact, adrenergic signaling have also been shown to negatively impact T cell function and blocking this signal improved immunotherapy responses. We therefore hypothesize that adrenaline in chronic stress conditions is detrimental to the mobilization and function of immune cells, while acute exercise level of adrenaline is beneficial. This project aims to study the impact of adrenaline at physiological concentrations on the function of immune cells.

Methods

The functionality of T and natural killer (NK) cells is assessed upon exposure to adrenaline in vitro and in cancer patients post exercise. In the in vitro part, human peripheral blood mononuclear cells were activated in the presence of acute or chronic isoprenaline (ISO) – a β -adrenergic receptor (β -AR) agonist – at physiological doses and analyzed based on cytokine production.

Results

Acute stimulation of activated T cells with ISO at physiological concentrations showed no long-term impact on interferon gamma (IFN- γ) secretion, while chronic exposure to ISO decreased IFN- γ levels.

Conclusions

Preliminary data show that acute physiological levels of ISO did not hamper cytokine secretion of immune cells, supporting the idea of combining exercise with immunotherapy. Further results will potentially help explain the opposing effect of adrenaline on the immune system.

01 Anton Friis Mariager

Abstract title	Prevalence and time of closure of Open Ductus Arteriosus in term born neonates
Presenter	Anton Friis Mariager
Title	dr.med
If PhD, year of defence	2025
Affiliation	Cardiological ressearch department, Herlev Hospital
E-mail	anton.friis.mariager@regionh.dk
Authors and affiliations	Anton Friis Mariager, MD, Alberte Hammeken, MS, Mikkel Malham, MD, PhD, Anna Axelsson Raja, Anna Sellmer, MD, PhD, Raheel Altaf Raja MD, PhD, Johan Navne MD6, Anne-Sophie Sillesen, Henning Bundgaard, prof, MD, Kasper Iversen, prof, MD, Ester Garne MD, Dorthe Lisbeth Jeppesen, MD, PhD3.

Abstract text – limited to 250 words

Background

The ductus arteriosus (DA) is a part of the fetal circulation. Normally the DA close in the neonatal cardiac transition period immediately after birth, but for some neonates the closure is delayed. Though a delayed closure is thought to be a common phenomenon, little is known about the prevalence of open DA and the timing of the spontaneous closure in term born children. The aim of this study were to evaluate the prevalence of an open DA in term born neonates within the first 28 days after birth.

Method

Echocardiograms were prospectively collected in the Copenhagen Baby Heart Study with just over 25.000 examination in the database. The present study included term born neonates with an echocardiogram performed in the neonatal period up to 28 days after birth. Neonates with findings of other congenital heart defects than atrial septal defects were excluded. All echocardiograms were analyzed to diagnose an open DA.

Results

A total of 21,649 neonates were included in this study. The median age at examination was 11 days (IQR=4-18). In 485 neonates, an open DA (2.3%) were identified. In those examined at day zero (n=130), day two (n=1090), and seven (n=1080), an open DA were found in 36%, 8% and 0.6%, respectively. After day seven the prevalence of an open DA was stable around 0.6%.

Conclusion

This large-scale echocardiography study in healthy neonates showed a high prevalence of open DA in the first day of life, with a rapid decline to a prevalence of less than 1% at day seven after birth. After day seven the prevalence of DA remained stable at around 0.6%, suggesting spontaneous closure after day seven is less likely.

02 Casper K. Nielsen

Abstract title	Ready-to-use dasiglucagon corrects postprandial hypoglycaemia in Roux-en-Y gastric bypass-operated individuals
Presenter	Casper K. Nielsen ¹
Title	MSc, PhD-stud
If PhD, year of defence	
Affiliation	Center for Clinical Metabolic Research, Gentofte Hospital,
E-mail	casper.kjaersgaard.nielsen@regionh.dk
Authors and affiliations	Inas JK Houji ¹ , Caroline C. Øhrstrøm ² , Mads M. Helsted ¹ , Liva S. Krogh ¹ , Nicklas J. Johansen ¹ , Tina Vilsbøll ^{1,3,4} , Filip K. Knop ^{1,3,4,5} ¹ Center for Clinical Metabolic Research, Gentofte Hospital, University of Copenhagen, 2900 Hellerup, Denmark; ² Department of Medicine, Zealand University Hospital, 4600 Køge, Denmark; ³ Steno Diabetes Center Copenhagen, 2700 Herlev, Denmark; ⁴ Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, 2200 Copenhagen, Denmark; ⁵ Novo Nordisk Foundation Center for Basic Metabolic Research, Faculty of Health and Medical Sciences, University of Copenhagen, 2200 Copenhagen, Denmark

Abstract text – limited to 250 words

Introduction: Post-bariatric hypoglycaemia (PBH) is a debilitating complication following Roux-en-Y gastric bypass (RYGB) surgery affecting up to 75% of operated individuals and is characterised by recurrent and frequent postprandial hypoglycaemic episodes; currently, no effective medical therapy exists. Dasiglucagon is a novel aqueous stable glucagon analogue available in a ready-to-use pen for hypoglycaemia rescue administration.

Methods: The aim of the study was to investigate the efficacy of 4 weeks self-administration of 120 µg dasiglucagon compared with 4 weeks of placebo in reducing time in level 1 and 2 hypoglycaemia (<3.9 and <3.0 mmol/l) and assessed by continuous glucose monitoring (CGM). Twenty-four RYGB-operated individuals with CGM-confirmed PBH participated in a proof-of-concept, double-blind, randomised, placebo-controlled crossover study and were instructed to self-administer 120 µg dasiglucagon when alarmed by the CGM (at plasma glucose <3.9 mmol/l) in conjunction with a confirmatory self-monitoring of blood glucose (SMBG) reading <3.9 mmol/l.

Results: Compared with placebo, treatment with dasiglucagon significantly reduced time in level 1 hypoglycaemia by 35% (−18.4 min/day 95% CI [−29.4 to −7.4], p=0.0021) and time in level 2 hypoglycaemia by 55% (−5.9 min/day 95% CI [−8.3 to −3.4], p<0.0001). Furthermore, we observed correction of hypoglycaemia within 15 minutes in 401 of 412 dasiglucagon administrations as compared to 104 of 357 placebo administrations (97.2% vs. 29.1% recovery rate, Pearson Chi-square $\chi^2(1)=394,589$, p<0.0001). Dasiglucagon was well tolerated, with few adverse events.

Conclusion: CGM-guided self-administration of dasiglucagon effectively corrected postprandial hypoglycaemia in RYGB-operated individuals and is a promising therapeutic agent in the treatment of PBH.

03 Charlotte Näslund Koch

Abstract title	Smoking is an independent but not a causal risk factor for psoriasis: results from a Mendelian randomization study
Presenter	Charlotte Näslund Koch
Title	MD, PhD Student
If PhD, year of defence	
Affiliation	Department of Dermatology and Allergy
E-mail	charlotte.sigrid.erika.naeslund.koch@regionh.dk
Authors and affiliations	Charlotte Näslund Koch, Department of Dermatology and Allergy Signe Vedel-Krogh, Department of Clinical Biochemistry Stig Egil Bojesen, Department of Clinical Biochemistry, The Copenhagen General Population Study Lone Skov, Department of Dermatology and Allergy

Abstract text – limited to 250 words

Background:

Smoking is strongly associated with psoriasis in observational studies; however, whether this association is causal or due to confounding or reverse causation is unclear.

Objective:

We hypothesized that smoking is an independent and causal risk factor for psoriasis and tested this in a Mendelian randomization approach.

Methods:

We included 105,912 individuals, including 1,240 cases of psoriasis, from the Copenhagen General Population Study with full information on lifestyle factors, biochemistry, and genotype data. First, we assessed the observational risk of incident psoriasis according to cumulative smoking during 9 years of follow-up. Second, we used a genetic variant (CHRNA3 rs1051730), which is strongly associated with cumulative smoking, as a proxy for smoking, to assess the causal relationship between smoking and psoriasis. Psoriasis were defined using ICD-8 and ICD-10 codes.

Results:

In observational analyses, risk of psoriasis increased in a stepwise manner according to cumulative smoking with a multivariable adjusted hazard ratio of 1.64 (95% confidence interval: 1.35-2.00) in ever smokers with ≤ 20 pack-years and 2.23 (1.82-2.73) in ever smokers with > 20 pack-years, compared to never smokers. In genetic analyses, the odds ratio for psoriasis was 1.11 (0.98-1.25) in heterozygotes and 0.99 (0.81-1.21) in homozygotes, compared to non-carriers.

Conclusion:

Observationally, smoking is an independent risk factor for psoriasis. However, using genetic data as a proxy for lifelong high cumulative smoking to avoid confounding and reverse causation, we could not find evidence of a causal relationship between smoking and psoriasis.

04 Gustav Gede Nervil

Abstract title	Doctors Diagnostic Accuracy improved by digital patient cases through education mobile application
Presenter	Gustav Gede Nervil
Title	MD, Ph.D. student
If PhD, year of defence	
Affiliation	Department of Plastic Surgery, Herlev Hospital
E-mail	gustav.gede.nervil@regionh.dk
Authors and affiliations	Gustav Nervil Gede, MD, Herlev Hospital Martin Tolsgaard, MD, PhD, CAMES, Rigshospitalet Tine Vestergaard, MD, PhD, Odense University Hospital Annette Chakera, MD, PhD, Herlev Hospital Henrik Sølvsten, MD, PhD, Hudlægecenter Nord Niels Kvorning Ternov, MD, PhD, Herlev Hospital Lisbet Rosenkrantz Hölmich, Professor, MD, DMSc, Herlev Hospital

Abstract text – limited to 250 words

Introduction

Increasing doctors diagnostic accuracy on skin and mole cancer is the best way to avoid over-treatment, over-diagnosis and misdiagnosis of melanoma. Current bedside education is insufficient and more efficient methods are needed. With this study we investigate if seeing digital patient cases on an educational mobile application (EMA) can improve doctors diagnostic accuracy of melanoma and skin cancer.

Methods

Participants were tested using a Multiple Choice Questionnaire (MCQ) with 12 patient-cases with prior evidence before they were either given access to an EMA for 8 days (Intervention) or not (Control), and were then tested with an MCQ again on day 16.

Doctors in the intervention group were asked to diagnose 500 patient cases and read written educational material on the diagnoses they most commonly misdiagnosed.

Results

From the Intervention and Control groups 86 and 34 doctors finished the final MCQ, respectively.

Participants in the Intervention spend 2,5 hours diagnosing digital patient-cases and 1 hour reading the written educational material.

Their MCQ score increased by 27% (Intention-To-Treat) and 30% (Per-Protocol) and their in-system diagnostic accuracy on 40485 cases increased from 42% to 52%.

Their malignancy-detection rate increased from 67% to 72%.

The most commonly misdiagnosed lesion was Lentigo Maligna and the most commonly over-diagnosed benign diagnosis was "seborrhoeic keratosis/Lentigo".

Participants in the intervention group increased their diagnostic confidence significantly.

The Control group did not increase their MCQ score nor their confidence.

Conclusion

Self-paced learning using digital patient-cases presented on a mobile device significantly increases doctors' diagnostic accuracy and confidence.

05 Jonathan Wenstrup

Abstract title	Dispatcher Stroke Recognition in Emergency Medical Call Centre and Out-of-Hours Services calls in Copenhagen, Denmark
Presenter	Jonathan Wenstrup
Title	M.D. Ph.D. Student
If PhD, year of defence	-
Affiliation	Neurovascular Research Unit, Department of Neurology,
E-mail	jonathan.wenstrup@regionh.dk
Authors and affiliations	Wenstrup, J.a,b, Blomberg, S.N.F.c, Christensen, H.Cb,d, Folke, F. b,d,e, Christensen, H. d,f, Kruuse, C. a,d. Affiliations: a. Department of Neurology, Copenhagen University Hospital - Herlev and Gentofte, Herlev, Denmark b. Emergency Medical Services Copenhagen, Denmark. c. Emergency Medical Services, Region Zealand. d. Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark e. Department of Cardiology, Copenhagen University Hospital - Herlev and Gentofte, Herlev, Denmark f. Department of Neurology, Copenhagen University Hospital - Bispebjerg and Frederiksberg, Copenhagen, Denmark.

Abstract text – limited to 250 words

Introduction:

Recognition of stroke symptoms by Emergency Medical Services (EMS) is instrumental in providing timely recanalization treatments. We aimed to assess the recognition of stroke by EMS via the Emergency Medical Call Centre (EMCC) dispatchers and Out-of-Hours Health Service (OOHS) dispatchers.

Methods:

In a registry study, based on 2015-2020 data from the Copenhagen EMS internal call register and the Danish Stroke Registry, we calculated sensitivity, positive predictive value (PPV), specificity and negative predictive value (NPV) of dispatcher suspicion of stroke or transitory ischemic attack (TIA) and compared against discharge diagnosis.

Results:

We included 462,029 contacts to EMCC and 2,573,865 contacts to OOHS. In total, 19,798 contacts had a stroke or TIA diagnosis at hospital discharge.

Sensitivity for EMCC dispatchers was 0.64, PPV was 0.28, specificity was 0.96 and NPV was 0.99.

Their sensitivity improved from 0.62 to 0.68 during the observation period, with no change in PPV.

Sensitivity for OOHS dispatchers was 0.25, PPV was 0.22, specificity was >0.99 and NPV was >0.99.

Their sensitivity improved from 0.20 to 0.25. PPV decreased from 0.26 to 0.19. There were no changes in specificity or NPV.

Both EMCC and OOHS more frequently overlooked stroke in women, in patients calling more than three hours after symptom onset and for more severe strokes. For OHHS, advanced age correlated with lower recognition.

Conclusions:

Recognition of stroke needs to be improved both in EMCC and in OOHS to reduce prehospital delay. Solutions to improve recognition of stroke by dispatchers must be identified.

06 Julie Nyholm Kyvsgaard

Abstract title	INFECTION BURDEN MEDIATES RISK FACTORS OF ASTHMA-LIKE SYMPTOMS AND PREDICTS CHILDHOOD ASTHMA
Presenter	Julie Nyholm Kyvsgaard
Title	MD, ph.d. student
If PhD, year of defence	
Affiliation	1. COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Department of Pediatrics, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark
E-mail	julie.kyvsgaard@dbac.dk
Authors and affiliations	Julie Nyholm Kyvsgaard, MD1,2; Bo Lund Krogsgaard Chawes, MD, PhD, DMSc1; Nicklas Brüstad, MD, PhD1; Ann-Marie Malby Schoos, MD, PhD1,2; Klaus Bønnelykke, MD, PhD1; Hans Bisgaard, MD, DMSc1; Jakob Stokholm, MD, PhD1,2,3. Affiliations: 1.COPSAC, Copenhagen Prospective Studies on Asthma in Childhood, Department of Pediatrics, Herlev and Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark 2. Department of Pediatrics, Slagelse Hospital, Slagelse, Denmark 3. Section of Microbiology and Fermentation, Department of Food Science, University of Copenhagen

Abstract text – limited to 250 words

Introduction

Risk factors of asthma in childhood may act through an increased infection burden as respiratory tract infections often trigger asthma-like episodes and are associated with asthma. This study investigated whether the association of established risk factors for asthma-like episodes in early childhood is mediated through an increased burden of infections.

Methods

The study included 662 children from the COPSAC2010 mother-child cohort, where infections were registered in daily diaries at age 0–3 years. The association between established risk factors for asthma-like episodes and infection burden was analysed by quasi-Poisson regressions and mediation analyses were performed for significantly associated.

Results

In the first three years of life the children experienced a median of 16 (range 12–23) infectious episodes. Children with a high burden of infections (i.e., >median) had an increased risk of asthma until age 10 years: OR 3.61, 95% CI (2.43–5.35); $p < 0.001$. Mediation analyses showed that infection burden partly mediates the effect of maternal asthma (34.4%), siblings at birth (17.6%), asthma polygenic risk score (29.1%), and airway immune score (72.8%) on number of episodes with asthma-like symptoms ($p < 0.05$), whereas the associations of male sex, low birth weight, maternal antibiotic use were not mediated through infection burden.

Conclusion

Several risk factors for asthma-like symptoms in early childhood act through an increased infection burden in the first three years of life, but interestingly not factors such as male sex and low birth weight. Prevention of infectious episodes in early childhood may therefore be beneficial to reduce development of childhood asthma.

07 Louis Lind Plesner

Abstract title	Estimating the impact of chest radiograph automation with artificial intelligence
Presenter	Louis Lind Plesner
Title	MD, ph.d student
If PhD, year of defence	-
Affiliation	Department of Radiology, Herlev and Gentofte hospital
E-mail	louis.lind.plesner@regionh.dk
Authors and affiliations	Louis Plesner (1), Felix Müller (1), Janus Nybing (2), Lene Collatz (1), Mikael Boesen (2), Olav Wendelboe Nielsen (3), Michael Andersen (1) 1) Department of Radiology, Herlev and Gentofte Hospital 2) Department of Radiology, Bispebjerg and Frederiksberg Hospital 3) Department of Cardiology, Bispebjerg and Frederiksberg Hospital

Abstract text – limited to 250 words

Introduction

This study tested the diagnostic performance of an AI algorithm intended to identify normal chest radiographs (CXR) with high-confidence for autonomous reporting. Our main outcomes were: AI sensitivity of abnormal CXR's and hence patient safety compared to current standard reporting and the number of CXR's potentially automated.

Methods

We included consecutive posteroanterior CXR's from unique adult patients in 4 hospitals, serving in-/ and outpatients. Three thoracic radiologists labelled cases for an exhaustive list of CXR findings in a consensus reference standard where patients were classified depending on case-level most severe CXR finding in categories: 'Critical', 'Other remarkable', 'Unremarkable' or 'Normal' (no abnormalities). Radiological reports were read and similarly classified by a researcher. The AI system classified CXR's into 'high-confidence normal' or 'not high-confidence normal'.

Results

We included 1529 patients after exclusion of 502 patients, of which 477 patients were excluded only due to anteroposterior view. There were 617 (40%), 232 (15%), 251(16%) and 429 (28%) patients in categories above, respectively. The AI classified 130 as 'high-confidence normal'. The sensitivity of the AI for finding abnormal cases was 99.1% (95% CI: 98.3-99.6) and was 99.8% (99.1-99.9) for critical cases. Corresponding numbers for radiologist reports were 72.3% (69.5-74.9) and 93.5% (91.2-95.3). Specificity of the AI was 28.0% (23.8-32.5) (120/429).

Conclusion

This study found that 28 percent of the total number of normal PA chest radiographs in hospital based radiology clinics could be potentially automated by the AI with a very high sensitivity, which was higher than that of the radiologist.

08 Niklas Dyrby Johansen

Abstract title	High-dose versus standard-dose quadrivalent influenza vaccine in older adults: a pragmatic, randomized, active-controlled feasibility trial
Presenter	Niklas Dyrby Johansen
Title	MD, PhD student
If PhD, year of defence	
Affiliation	Department of Cardiology
E-mail	niklas.dyrby.johansen@regionh.dk
Authors and affiliations	Niklas Dyrby Johansen, MD(1); Daniel Modin, MB(1); Joshua Nealon, PhD(2); Sandrine Samson, PhD(3); Camille Salamand, MSc(3); Matthew M Loiacono, PhD(4); Carsten Schade Larsen, MD, DMSc(5); Anne Marie Reimer Jensen, MD(1); Nino Emanuel Landler, MD(1); Brian L Claggett, PhD(6); Scott D Solomon, MD(6); Martin J Landray, PhD(7); Gunnar H Gislason, MD, PhD(1); Lars Køber, MD, DMSc(8); Prof Jens Ulrik Stæhr Jensen, MD, PhD(9); Pradeesh Sivapalan, MD, PhD(9); Lasse Skafte Vestergaard, MD, PhD(10); Palle Valentiner-Branth, MD, PhD(10); Tyra Grove Krause, MD, PhD(10); Prof Tor Biering-Sørensen, MD, PhD, MPH(1)

Abstract text – limited to 250 words

Background

The relative vaccine effectiveness (rVE) of high-dose quadrivalent influenza vaccines (QIV-HD) versus standard-dose quadrivalent influenza vaccines (QIV-SD) against hospitalizations and mortality in the general older population has not been evaluated in an individually randomized trial. Due to the large sample size required, such a trial will need to incorporate innovative, pragmatic elements.

Methods

We conducted a pragmatic, open-label, active-controlled, randomized feasibility trial in Danish citizens aged 65-79 years during the 2021/2022 influenza season. Participants were randomized 1:1 to QIV-HD or QIV-SD. Randomization and vaccination were integrated into routine vaccination practice and the trial relied solely on nationwide administrative health registries for data collection including baseline characteristics, clinical outcomes, and safety monitoring.

Results

We invited 34,000 persons to participate. A total of 12,477 randomized participants were included in the final analyses. Registry-based data collection was feasible with complete follow-up data for 99.97% of participants. Baseline characteristics were comparable to the overall Danish population (e.g. 20.4% vs. 22.9% with chronic cardiovascular disease). Compared with QIV-SD recipients, the QIV-HD group had a lower incidence of hospitalization for influenza or pneumonia (10 (0.2%) vs. 28 (0.4%) events; rVE 64.4% (95% CI 24.4% to 84.6%)) and all-cause mortality (21 (0.3%) vs. 41 (0.7%) events; rVE 48.9% (95% CI 11.5% to 71.3%)).

Conclusions

Conducting a large-scale pragmatic randomized vaccine trial in Denmark utilizing existing infrastructure and registry-based data collection was feasible. The incidence of hospitalization for influenza or pneumonia and all-cause mortality was significantly lower in the QIV-HD group compared with QIV-SD.