General PhD degree

Name: Zheer Kejlberg Al-Mashhadi *Pharmacological risk factors for fracture in type 2 diabetes mellitus*

Title: MD, PhD Dates: May 19–Jul 22 (degree awarded 25 Sep 2023)

Authorisation ID: OCPL8 Institution: Aarhus University (AU) & Steno

Diabetes Center Aarhus (SDCA)

Advisor: Prof. Søren Gregersen, consultant, PhD

Discipline: Pharmacoepidemiology

E-mail: contact@zheer.dk

Website: zheer.dk

GitHub: https://github.com/zheer-kejlberg Dates: Feb 12–Jan 18

ORCID: 0000-0003-1201-199X Institution: Dept. of Clinical Medicine, Aarhus University

Medical degree

Clinical work

| Apr 24 | Senior House Officer | General medicine, Lægehuset Marselis v. Læge Karen Kjær Larsen |
|---------------|--|--|
| Nov 23–Mar 24 | Part-time locum | Regional Psychiatry, Viborg, Central Denmark Region |
| Jul 23–Oct 23 | Senior House Officer, pt. 2 | Dept. of Endocrinology and Internal Medicine, AUH |
| May 23–Jun 23 | Research leave | 2 months' leave to finish PhD thesis |
| Aug 22–Apr 23 | Senior House Officer, pt. 1 | Dept. of Endocrinology and Internal Medicine, AUH |
| May 19–Mar 21 | Part-time locum | AUH Psychiatry, Central Denmark Region |
| Nov 18–Apr 19 | House Officer ("KBU") | Dept. of Psychosis (S7), AUH Psychiatry |
| May 18–Oct 18 | House Officer ("KBU") | Dept. of Endocrinology and Internal Medicine, AUH |
| Feb 18–Apr 18 | House Officer ("pre-KBU") | Dept. of Endocrinology and Internal Medicine, AUH |
| Aug 16–Dec 16 | Student internship | Dept. of Cardiology, Aalborg University Hospital |
| | | Course participation |
| Nov 19 | Basal Metabolism and Molecular Mechanisms in Diabetes (2.30 ECTS), Danish Diabetes Academy | |
| Apr 16 | Akutte invasive procedurer, SATS Aarhus | |
| Apr 16 | Emergency medicine, level 2, OAMS (Oslo Akuttmedisinske Studentforening), Oslo, Norge | |
| Sep 15 | Diving Medicine Summer School, Dive with Doctors, Dahab, Egypten | |
| Sep 14 | SATS Katastrofekursus, SATS Aarhus | |

Communication

| 2020–2022 | Q&A forum: 300+ questions answered (Facebook page "Ask a doctor about coronavirus") | |
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| Award | Best Flash Talk, PhD Day 2020, Health, AU | |
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| | Teaching | |
| Oct 18 | 3 hours, Communication in medicine (medical and nursing students), Student associations: PUST & SATS, AU | |
| Sep 17 | 3 hours, Crisis communication in medicine (medical students), Student association: SATS, AU | |
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| | Presentations | |
| Sep 22 | Pharmacological risk factors for fracture in type 2 diabetes mellitus, Thursday Meeting, Dept. of Endocrinology | |
| Jun 22 | Pharmacological risk factors for fracture in type 2 diabetes mellitus, Clinical conference, SDCA | |
| Mar 22 | Undertaking a PhD, Steno Thursdays, SDCA | |
| Dec 21 | The insulin suppression test as an alternative to HIEC for measuring insulin sensitivity, META lab meeting, SDCA | |
| Feb 20 | Measuring insulin sensitivity: the insulin suppression test and HIEC, Thursday Meeting, Dept. of Endocrinology | |
| Jan 20 | Diabetic bone disease, Reaven-lab, Stanford Cardiovascular Medicine, CA, USA | |
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| | Course participation |
|--------|---|
| Jun 21 | 2.60 ECTS, Advanced Course in Written English, Health, AU |
| Feb 20 | 2.80 ECTS, Research Presenter – Educational Informatics, Health, AU |
| Feb 20 | 2.70 ECTS, Principium – PhD students as teachers and learners, Health, AU |

Collaboration

| May 20–Sep 21 | Board member, The PhD association, Health, AU | |
|-----------------|--|--|
| Oct 15-Oct 17 | Board member, SATS Aarhus (Students' Anaesthesiologic and Traumatological Society) | |
| Oct 15, 16 & 17 | Course organiser for SATS Catastrophe Course x 3, SATS Aarhus | |
| Maj 16 | Junior Organiser, EMS2016 conference, Emergency Medical Services, The Capital Region of Denmark and TrygFonden | |

Organisation and administration

| May 24 | Performed quality improvement project on uric acid arthritis, Lægehuset Marselis | |
|---------------|---|--|
| Nov 22–Apr 23 | Clinical supervisor for house officer ("KBU-læge") | |
| Jan 21–Jan 23 | Early clinical rotation organiser (2nd semester medical students), Dept. of Endocrinology, AUH | |
| Feb 20–Feb 22 | Member of the PhD committee and the subcommittee for credits and waivers, The Graduate School of Health, Health, AU | |
| Nov 19–May 22 | Thursday meeting planner (weekly scientific meetings), Dept. of Endocrinology, AUH | |
| Jan 19–Apr 19 | Holiday shift planner, junior physicians, AUH Psychiatry | |

Health advocacy

| Co-author | Two chapters in the book "Kvalitet og patientsikkerhed under covid-19" (Quality and patient safety during covid-19) |
|-----------|---|
| | Published by the Danish Society for Patient Safety. |
| Sep 20 | Recipient of the Patient Safety Award 2020 along with the other contributors on "Ask a doctor about coronavirus". |
| | Awarded by the Danish Society for Patient Safety. |
| Feb 18 | Instructor: Basic CPR (6 hours), Salling Group |
| Mar 16 | First aid provider (8,5 hours), Rally Midtjylland |

Research and academia

| Publications | First authorships: 4 | Co-authorships: 8 |
|----------------|-------------------------------|---|
| Google Scholar | Citations: 178 H-index: | I10-index: 8 |
| Scopus | Citations: 128 H-index: | |
| | | Positions |
| Feb 25— | Postdoc, Steno Diabetes Cen | er Aarhus, part-time (40%) |
| | Prediction of type 2 diabetes | nd medication responses |
| May 19–Jul 22 | PhD student, Steno Diabetes | Center Aarhus and Aarhus University |
| | | Miscellaneous roles |
| May 21–Jul 22 | Co-investigator, Step-10, No | o Nordisk |
| | Efficacy and safety of once-w | ekly semaglutide 2.4 mg versus placebo in people with obesity and prediabetes |
| May 19–Jul 22 | Co-investigator, The SOUL T | al, Novo Nordisk |
| | Semaglutide Cardiovascular C | utcomes Trial in Patients with Type 2 Diabetes Mellitus |

| | Novo Nordisk |
|---------------|---|
| Feb 17–Jun 17 | Clinical Research Assistant, NeuRescue ApS |
| | Compart well-the continue and continue |
| ша | Current collaborations and projects |
| #1 | Constitutional chromosomal abnormalities and adverse outcomes of COVID-19: a nationwide study, |
| | Collaboration: Dept. of Clinical Epidemiology, Dept. of Clinical Genetics & Dept. of Endocrinology, Aarhus University Hospital |
| #2 | Metcercise, randomised controlled trial on the effects of exercise on bone health in type 2 diabetes |
| | Collaboration: Steno Diabetes Center Aarhus & Steno Diabetes Center North Denmark (SDCN) |
| #3 | HEADWISE , national stepped-wedge cluster-RCT comparing different algorithms for cerebral CT after mild head trauma. |
| | Collaboration: Dept. of Radiology, Aarhus University Hospital, "Vælg Klogt", and the HEADWISE consortium |
| | Research stays |
| Jan 20 | Stanford Cardiovascular Medicine, CA, USA |
| | 2 week personal training in the insulin suppression test with Dr. Fahim Abbasi og Dr. Joshua Knowles, Reaven-lab. |
| Nov 21 | Steno Diabetes Center North Denmark, Aalborg, DK |
| | 4 week research stay with Prof. Peter Vestergaard |
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| | Conference presentations |
| Sep 22 | Short oral presentation, EASD (European Association for the Study of Diabetes), Stockholm, Sweden |
| | "Fracture risk in treatment with GLP-1RA compared to DPP-4i" |
| Jun 22 | Oral presentation, DES (Dansk Society for Endocrinology) conference 2022, Kolding, Denmark |
| | "SGLT2 inhibitor treatment does not increase risk of osteoporotic fractures compared to GLP-1 receptor agonists" |
| May 22 | Oral presentation, ECE (European Congress of Endocrinology), Milano, Italy |
| | "SGLT2 inhibitor treatment does not increase risk of osteoporotic fractures compared to GLP-1 receptor agonists" |
| May 22 | Oral presentation, SSSD (Scandinavian Society for the Study of Diabetes), Reykjavik, Iceland |
| | "Fracture risk in treatment with GLP-1 RA compared to DPP4-I" |
| | Other scientific meetings |
| Dec 22 | Oral presentation, The Dept. of Endocrinology & SDCA symposium |
| DCC 22 | |
| lun 22 | "Systemic glucocorticoid use increases fracture risk independently of type 2 diabetes mellitus" Poster, Steno Research Retreat |
| Jun 22 | • |
| Nov 21 | "SGLT2-I treatment is not associated with an increased risk of osteoporotic fractures when compared to GLP-1 RA" |
| Nov 21 | Oral presentation, SDCA-SDCN research symposium "Diabetic bone disease" |
| lan 21 | |
| Jan 21 | Online poster, PhD Day 2021, Health, AU |
| In 20 | "SGLT2-inhibitors and fracture risk" |
| Jan 20 | Flash talk, PhD Day 2020, Health, AU |
| | "Diabetic bone disease" |
| | Teaching |
| | (active teaching hours stated) |
| 13h 30m | Clinical teaching (medical students, 2nd semester), Dept. of Endocrinology, AUH |
| 42h 30m | Simulation: Emergency medicine week (medical students, 12th semester), Health, AU |
| 03h 00m | Lecture: Basic diabetology (molecular medicine students, 9th semester), Health, AU |
| 92h 00m | Instructor: Basic CPR (medical students, 2nd semester), Health, AU |
| 29h 45m | Simulation: Emergency medicine and communication (medical students), SATS Catastrophe Course & The FAM Day |
| 26h 45m | Teaching and simulation: Emergency medicine (medical students), SATS Aarhus |
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| 35h 00m | Practical training: venous access, arterial blood gas, ultrasound/eFAST (medical students), FADL, SATS Aarhus |
|---------------|--|
| 03h 00m | Practical training: Thoracostomy on pigs (medical students), SATS Aarhus |
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| | Peer reviewer |
| Journals | Frontiers in Endocrinology |
| | Basic & Clinical Pharmacology & Toxicology |
| | Scientific Reports |
| | R-udvikler |
| R-package | https://github.com/zheer-kejlberg/ Z.gtsummary.addons |
| | Open-source R-package to add SMD-values and to mask microdata in baseline tables developed using {gtsummary} |
| R-package | https://github.com/zheer-kejlberg/ publistR |
| | An R-package to easily create structured and formatted publication lists |
| | Course participation |
| May 22 | 3.10 ECTS, Causal Inference in Health Science, Health, AU |
| Mar 22 | 2.00 ECTS, Which Covariates to Adjust for: An introduction to causal directed acyclic graphs, Health, AU |
| Mar 22 | 3.10 ECTS, Introduction to Machine Learning in Health Sciences, Health, AU |
| Oct 21 | 5.00 ECTS, Stanford Medical Statistics Certificate , Stanford Online |
| Oct 20 | 4.70 ECTS, Applying Clinical Epidemiological Methods and Danish databases to study chronic disease, Health, AU |
| Sep 19 | 3.00 ECTS, Responsible Conduct of Research, Health, AU |
| Sep 19 | 1.40 ECTS, Data Management and Stata, Health, AU |
| May 19 | GCP: Good Clinical Practice, Brookwood Academy |
| Jan 16–Jun 16 | 5.00 ECTS, Clinical Epidemiology (elective course, 9th semester), Health, AU |
| | Additional conference participation |
| Mar 17 | NAMS (Norsk Akutmedicinsk Studenterforum), NTNU, Trondheim, Norge |
| Apr 17 | Prehospital Medicine Against the Elements, St. Bartholomew's Hospital, London, UK |
| May 16 | EMS2016 (Emergency Medical Services), Emergency Medical Services and TrygFonden, Copenhagen, DK |

Miscellaneous

| Languages | Danish, English, Arabic (Iraqi), Kurdish (Sorani) | |
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| Software | Languages: R (level: high), Python (intermediate), Matlab (beginner), STATA (beginner) | |
| | IDE: RStudio, Spyder. | |
| | Version Control: Git + GitHub. | |
| | Package and environment management: Homebrev, conda, pip | |
| Memberships | Danish Medical Association and Junior Doctors' Association | |
| | Danish Society for Endocrinology and The Society for Young Endocrinologists | |
| | Dansk Society for Pharmacoepidemiology | |