Press release

Please fill in this form and return it to graduateschoolhealth@au.dk in Word format no later than three weeks prior to your defence.

Basic information

Name: Khoa Manh Dinh Email: khoadinh@rm.dk Phone: 60600953

Department of: Clinical Medicine

Main supervisor: Christian Erikstrup

Title of dissertation: Predictors and health consequences of Staphylococcus aureus nasal carriage

Date for defence: 24-09-2021 at (time of day): 14:00 Place: Auditorium A (G206-145), Aarhus University Hospital

Press release (Danish)

En kohorte undersøgelse af danske bloddonorer med henblik på at identificere risikofaktorer og undersøge helbredseffekter af nasal bærertilstand med Staphylococcus aureus.

Staphylococcus aureus er blandt de hyppigste årsager til hospitalserhvervede infektioner, som er forbundet med en høj dødelighed. Samtidig er S. aureus også en kommensal, der koloniserer vores slimhinder i næsen hos ca. 30-50% i befolkningen. Bærertilstand med S. aureus i næsen er associeret med en øget risiko for infektioner på hospitaler, men det er endnu uklart om den samme risiko også gælder hos raske individer. Derfor er der behov for store befolkningsbaserede undersøgelser for at skabe mere viden om epidemiologien og underliggende årsager bag bærertilstand med S. aureus i næsen og risikoen for sygdom.

I et nyt ph.d.-projekt har opbygningen af en kohorte af 8.000 bloddonorer med næsepodninger og blodprøver bidraget til undersøgelsen af sammenhængene mellem S. aureus bærertilstand og symptomer på hidradenitis suppurativa, atopiske lidelser og risikoen for infektioner samt betydningen af en polymorfi i CCR5 på S. aureus bærertilstand. Ph.d.-projektet fra Aarhus Universitet, Health er gennemført af Khoa Manh Dinh, der forsvarer det d. 24/09-2021.

Ph.d.-projektets konklusioner er, at S. aureus bærertilstand i næsen ikke er associeret med CCR5Δ32 polymorfien og at asymptomatisk bærertilstand ikke er forbundet med en øget risiko for infektioner hos bloddonorer. S. aureus bærertilstand er associeret med allergisk rhinitis, astma og atopisk dermatitis, hvorimod vi observerede en omvendt sammenhæng mellem S. aureus bærertilstand og hidradenitis symptomer. Yderligere har ph.d.-projektet bidraget til etableringen af en biobank til fremtidige studier om underliggende mekanismer og følgevirkninger af S. aureus bærertilstand.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 24/09-2021 kl. 14:00-16:00 i Auditorium A (G206-145), Aarhus Universitetshospital, Palle Juul-Jensens Boulevard 99, Aarhus N. Titlen på projektet er "Predictors and health consequences of Staphylococcus aureus nasal carriage". Yderligere oplysninger: Ph.d.-studerende Khoa Manh Dinh, e-mail: khoadinh@rm.dk, tlf. 60600953.

Bedømmelsesudvalg:
Søren Jensen-Fangel, overlæge, klinisk lektor, dr.med., Infektionssygdomme, Aarhus Universitetshospital
Anne-Sofie Furberg, Professor, PhD, Molde University College, UiT Arctic University of Norway
Barbara Bröker, Professor, PhD, Department of Immunology, University of Greifswald, Germany

Press release (English)

Cohort studies identifying determinants and examining health effects of nasal carrier state with Staphylococcus aureus among Danish blood donors.

Staphylococcus aureus is the leading overall cause of nosocomial infections with a high mortality. S. aureus is also a commensal colonising the anterior nares of 30–50% in the general population. Nasal carriage is a major risk factor for nosocomial infections among admitted patients. However, it remains unclear whether the same risk also applies to healthy individuals in general population and studies identifying genetic markers associated with S. aureus nasal carriage are scarce. Thus, large population-based studies are needed to improve our understanding of the ecology, pathophysiology, epidemiology, and host determinants of S. aureus nasal carriage and infection in the community and the subsequent transition to hospital-requiring treatments.

In this PhD project, the establisment of a cohort of 8,000 blood donors with a biobank of nasal swabs and plasma samples has contributed to the studies of the associations between S. aureus nasal carriage and symptoms of hidradenitis suppurativa, atopic disorders, and the risk of infections as well as the impact of a CCR5 polymorphism on S. aureus nasal carriage. The PhD project from Aarhus University, Health was carried out by Khoa Manh Dinh, who is defending his dissertation on 24/09-2021.

This PhD project provides evidence for S. aureus nasal carriage was not associated with CCR5Δ32 polymorphism and that asymptomatic nasal carriage with S. aureus has no significant health consequences regarding infection susceptibility among healthy individuals. While S. aureus nasal carriage was associated with atopic diseases, an inverse association between self-reported symptoms of HS and S. aureus nasal carriage was observed. In addition, the PhD project has resulted in the establishment of a research platform including a biobank for future studies on the underlying mechanisms and consequences of S. aureus nasal carriage.

The defence is public and takes place on 24/09-2021 at 14:00–16:00 in the Auditorium A (G206-145), Aarhus Universitetshospital, Palle Juul-Jensens Boulevard 99, Aarhus N. The title of the project is "Predictors and health consequences of Staphylococcus aureus nasal carriage". For more information, please contact PhD student Khoa Manh Dinh, e-mail: khoadinh@rm.dk, tlf. +45 60600953.

Assessment committee:
Søren Jensen-Fangel, Chief physician, Associate professor, DMSc, Department of Infectious Diseases, Aarhus University Hospital
Anne-Sofie Furberg, MD, PhD, Professor, Molde University College, UiT Arctic University of Norway
Barbara Bröker, MD, PhD, Professor, Department of Immunology, University of Greifswald, Germany

Permission

By sending in this form:

- I hereby grant permission to publish the above Danish and English press releases.
- I confirm that I have been informed that any applicable inventions shall be treated confidentially and shall under no circumstances whatsoever be published, presented or mentioned prior to submission of a patent application, and that I have an obligation to inform my head of department and the university's Patents Committee if I believe I have made an invention in connection with my work. I also confirm that I am not aware that publication violates any other possible holders of a copyright.