

## The Epidemiology and Burden of Psoriasis

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The defence of the doctoral dissertation by Alexander Egeberg “The epidemiology and burden of psoriasis” took place at Gentofte Hospital, Friday 20 August 2021. The Opponent was Professor Marcus Schmitt-Egenolf, Umeå University Hospital. Available from: <https://healthsciences.ku.dk/research/doctoral-degree-ku/doctoral-degrees-2020/>

### SUMMARY

Psoriasis is a chronic inflammatory disease which may have implications far beyond the skin. Presence of comorbidity, i.e. concurrent medical or psychiatric conditions, is reported with higher frequency in patients with psoriasis compared with non-psoriasis individuals. A number of factors, including systemic inflammation, genetic and exogenous (in particular modifiable life-style) risk factors, have been put forward to explain this increased prevalence of comorbidity. With the emergence of new and more effective treatments for psoriasis, there is a still-increasing need to understand the disease burden, both physically and emotionally, to properly manage patients and find the most appropriate long-term treatment strategy.

This thesis included 10 original articles, which each in their own way attempts to deepen our understanding of the epidemiology and burden of psoriasis on a physical and emotional level, as well as the potential impact of treatment in these patients.

Using questionnaire-based data, a lifetime psoriasis prevalence of 7.9% in was found in Denmark, and a point-prevalence (“current psoriasis”) of 5.0%, supporting the notion that psoriasis is more frequent than previously believed. We further described key clinical aspects of psoriasis, including the anatomical distribution and showed that presence of life-style-associated comorbidity risk factors was high, suggesting that certain comorbidities in psoriasis to a large degree may be preventable through timely intervention. By linking nationwide registry data from Denmark, we showed that weight-loss through bariatric surgery was associated with reduced future risk of being diagnosed with psoriasis, and we demonstrated that the incidence of diagnosed psoriatic arthritis (PsA) is increasing on a population-level. Furthermore, through a systematic review and meta-analysis, we showed that more than 1 of 4 psoriasis patients will develop PsA during their life course. Moreover, we demonstrated not only that the incidence and



From left to right: Second opponent Professor Klaus Ejner Andersen, Alexander Egeberg, first opponent Professor Marcus Schmitt-Egenolf, the chair of the assessment committee Professor Tove Agner, the chair of the defence ceremony Professor Gregor Jemec.

risk of inflammatory bowel disease varies with age and sex in patients with psoriasis, but that this and other immune-mediated inflammatory diseases occurs before psoriasis is diagnosed in the majority of cases. In addition, I demonstrated and described a considerable emotional burden in patients with psoriasis, but also found that although the risk of depression was increased in patients with psoriasis, this very rarely led to suicide. All in all, these findings highlight the immense emotional burden of psoriasis, which was further supported by patient-reported data showing a high need for complete or almost complete skin clearance regardless of disease severity.

While patient-tailored psoriasis management should ideally consider a multitude of factors including comorbidity risk assessment, the clinical relevance and absolute risks should always be kept in mind. The 10 studies included in this thesis attempt to add nuances to the existing literature, and the subsequent discussion section seeks to challenge current

(mis)-conceptions regarding psoriasis and comorbidity development. Although a multitude of other comorbid conditions and aspects of the psoriasis burden could have been included, the current thesis gives a high-level overview of the current sum of knowledge and highlights areas where future research efforts may be directed in the coming years.

#### LIST OF ORIGINAL PUBLICATIONS

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4. Alinaghi F, Calov M, Kristensen LE, Gladman DD, Coates LC, Jullien D, Gottlieb AB, Gisoni P, Wu JJ, Thyssen JP, Egeberg A. Prevalence of psoriatic arthritis in patients with psoriasis: A systematic review and meta-analysis of observational and clinical studies. *J Am Acad Dermatol* 2019; 80: 251–265.e19.
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