

## Psoriasis and pregnancy - Adverse pregnancy outcomes in mother and child

**Cæcilie Bachdal Johansen**

Department of Dermatology and Venereology, Bispebjerg and Frederiksberg Hospital, University of Copenhagen, Denmark. E-mail: [caecilie.bachdal.johansen@gmail.com](mailto:caecilie.bachdal.johansen@gmail.com)

**Cæcilie Bachdal Johansen, MD, PhD, conducted her PhD studies at the Department of Dermatology and Venereology, Bispebjerg and Frederiksberg Hospital, University of Copenhagen. The defence of the thesis took place at the University of Copenhagen, on the 12<sup>th</sup> of September 2022. Principal supervisor was Professor Simon Francis Thomsen and primary co-supervisor was Associate Professor Espen Jimenez Solem. Opponents were Professor Marcus Schmitt-Egenolf and Associate Professor Kasper Fjellhaugen Hjuler. The thesis can be found at [https://www.linkedin.com/posts/c%C3%A6cilie-bachdal-johansen-a15168a6-psoriasis-and-pregnancy-activity-6977536860101165056-S4fB?utm\\_source=share&utm\\_medium=member\\_android](https://www.linkedin.com/posts/c%C3%A6cilie-bachdal-johansen-a15168a6-psoriasis-and-pregnancy-activity-6977536860101165056-S4fB?utm_source=share&utm_medium=member_android)**

Psoriasis is a chronic immune-mediated inflammatory disease with a lifetime prevalence of up to 8.2% in Danish women, and more than 66% of cases occur during their reproductive years, before the age of 40. Women with psoriasis more often have a multitude of medical, socioeconomic and psychological risk factors that constitute a risk for the pregnant mother and child. We know from related diseases – e.g. rheumatoid arthritis and inflammatory bowel disease – that women with these chronic immune-mediated inflammatory diseases have a higher risk of adverse maternal and neonatal outcomes.

In a cross-sectional study, we identified all Danish women with psoriasis, described their medical and socioeconomic characteristics and compared them to the entire background population of Danish women without psoriasis. We found that women with psoriasis had higher risk of all investigated comorbidities; lower socioeconomic status; higher healthcare consumption and higher drug use. The risks increased with psoriasis severity. Finally, women with psoriasis had increased risk of comorbidities during their reproductive years, comprising a risk for adverse pregnancy outcome for mother and child.

In a case-control study, where cases were adverse pregnancy outcomes and controls were live births, we found that women with moderate-severe psoriasis had a nearly three-fold increased risk of ectopic pregnancy (a pregnancy outside the womb) corresponding to 4 in 100 women with moderate-severe psoriasis.

In a matched cohort study, we compared women with psoriasis to women without psoriasis matched on age at delivery, body mass index and smoking status during pregnancy, and investigated their risk of giving birth to an infant small for gestational age or preterm. We found that women with psoriasis had an increased risk of giving birth to a small for gestational age infant at term.

Our studies provide useful information for physicians treating women

with psoriasis of reproductive age; with a reassuring message that women with psoriasis are, seemingly, not at increased risk of most investigated adverse maternal and neonatal outcomes. Clinical studies are needed to confirm our findings. Our findings stress the importance of interdisciplinary collaboration around women with psoriasis. Furthermore, clinical dermatological guidelines need to include structured pre-conceptual counselling with risk stratification of known risk factors for adverse pregnancy outcomes.

### LIST OF ORIGINAL PUBLICATIONS

- I. Johansen CB, Egeberg A, Jimenez-Solem E, Vittrup I, Skov L, Thomsen SF. Comorbidities, socioeconomic status, drug use, and health care consumption in Danish women with psoriasis: A nationwide cross-sectional study. *Int J Women's Dermatology*. Published online November 27, 2020. doi:10.1016/j.ijwd.2020.11.004
- II. Johansen CB, Egeberg A, Jimenez-Solem E, Skov L, Thomsen SF. Psoriasis and adverse pregnancy outcomes: A nationwide case-control study in 491,274 women in Denmark. *JAAD Int*. 2022;7:146-155. doi:10.1016/J.JDIN.2022.03.009
- III. Johansen CB, Egeberg A, Jimenez-Solem E, Skov L, Thomsen SF. Association of maternal psoriasis and small for gestational age or preterm birth: A nationwide matched cohort study in 69 080 singleton infants. *Clin Exp Dermatol*. Published online January 11, 2022. doi:10.1111/ced.15105.



From left to right: opponent assoc. prof Kasper Fjellhaugen Hjuler, chairperson prof Peter Damm, Cæcilie Bachdal Johansen PhD, opponent prof Marcus Schmitt-Egenolf, principal supervisor prof Simon Francis Thomsen, co-supervisor Alexander Egeberg DMSc, co-supervisor prof Lone Skov, primary co-supervisor assoc. prof Espen Jimenez Solem.