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## Introduction

- Psoriasis and generalised pustular psoriasis (GPP) are associated with significant morbidity.
- Understanding mortality patterns is paramount for enhancing management and outcomes in these patients.
- The aim of these cohort studies was to investigate excess mortality and cause-specific deaths in patients with psoriasis and GPP compared with the general population.**

Presentation of psoriasis on adult male trunk



Presentation of GPP on adult female arm



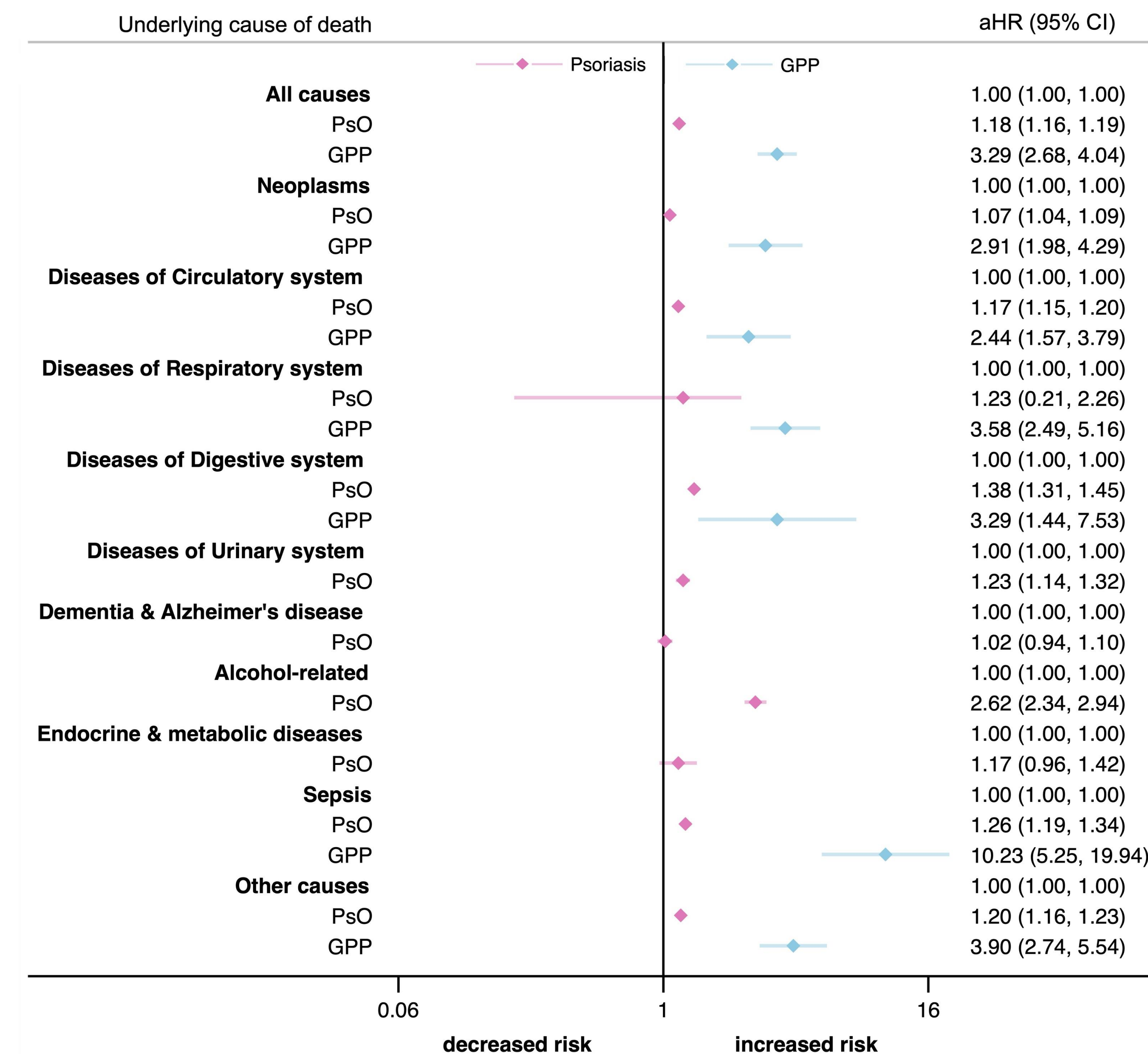
## Methods

- Retrospective population-based cohort study using electronic health records from the Clinical Practice Research Datalink (CPRD), a UK primary care database, linked with HES APC, ONS mortality, and CPRD ethnicity records for linkage-consenting English practices.
- 343,583 people with incident psoriasis identified from primary care & HES from 01/01/1998-31/12/2022. 615 people with incident GPP identified from HES (few recordings in CPRD) from 01/01/2008-31/12/2022.
- Cases were matched with comparators without the conditions (1:5 in the psoriasis cohort, 1:10 in the GPP cohort) by year of birth, sex, and general practice. Patients were followed until the earliest of transfer out of practice, date of last collection of data, end of study period (31/03/2023), or death.
- Abridged life tables estimated life expectancy. Years of life lost associated with psoriasis and GPP was estimated as the difference in life expectancy between comparators and cases.
- A competing risk flexible parametric survival model quantified all-cause and cause-specific hazard ratios adjusted for age, sex, ethnicity, deprivation, and calendar year (aHR).

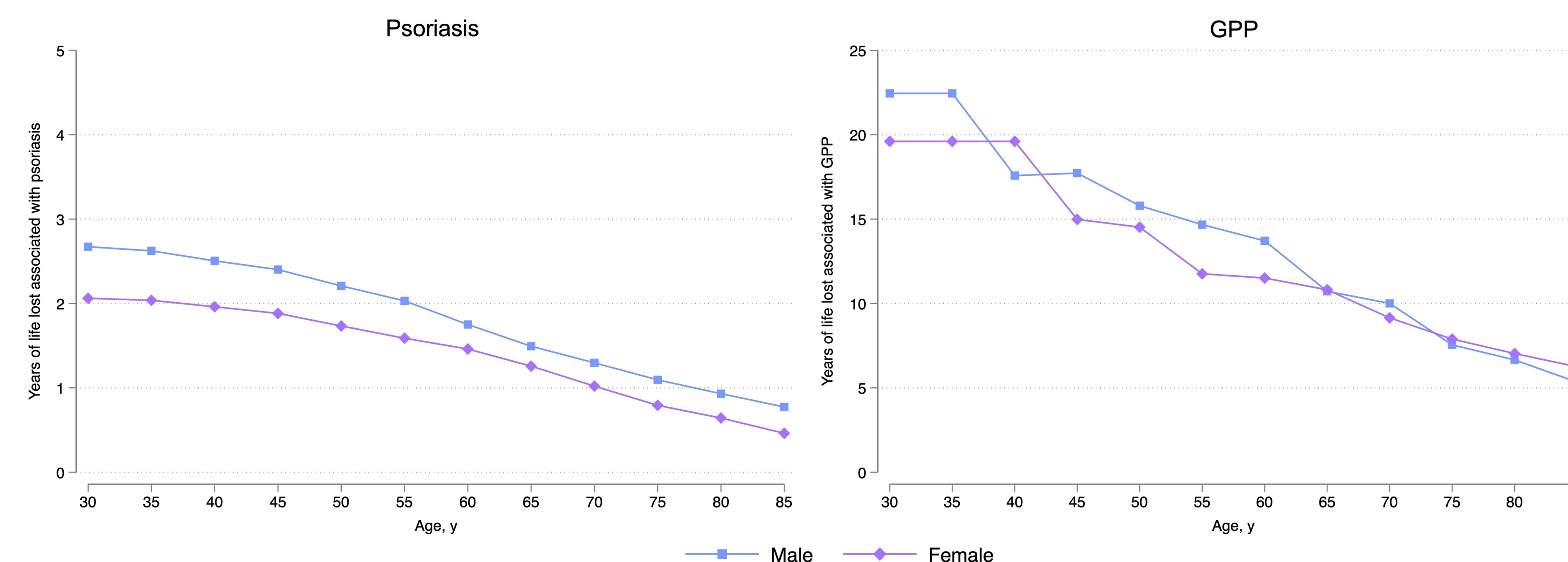
## Figures

**Figure 1. All-cause and cause-specific mortality in psoriasis and GPP patients compared with their matched controls**

\* Cause of death grouped into 10 mutually exclusive categories in the psoriasis cohort and 6 in the GPP cohort.



**Figure 2. Years of life lost associated with psoriasis and GPP, by sex**



## Results

### Psoriasis

- Crude mortality rate: psoriasis 13.7/1,000 person-years vs. controls 11.9/1,000 person-years
- Incident psoriasis was associated with an 18% increased risk of all-cause mortality (aHR 1.18; 95% CI 1.16-1.19); **Figure 1**.
- Psoriasis was associated with significantly increased risks of death from (**Figure 1**)
  - Alcohol-related causes:** 2.62 (2.34-2.94)
  - Digestive system diseases:** 1.38 (1.31-1.45)
  - Sepsis:** 1.26 (1.19-1.34)
  - Urinary system diseases:** 1.23 (1.14-1.32)
  - Circulatory system diseases:** 1.17 (1.15-1.20)
  - Neoplasms:** 1.07 (1.04-1.09)
- Psoriasis was associated with lower life expectancy across all ages compared with people without psoriasis, with the magnitude of loss attenuating with increasing age at diagnosis; **Figure 2**. At age 40, people diagnosed with psoriasis lost ~2.3 years of life on average.
- Sex-specific differences were small, with slightly greater loss of life years in males than females; at age 40, estimated losses were ~2.5 and ~2.0 years, respectively (**Figure 2**).

### GPP

- Crude mortality rate: GPP 56.3/1,000 person-years vs. 21.8/1,000 person-years
- Incident GPP was associated with a 3-fold increased risk of all-cause mortality (aHR 3.29; 95% CI 2.68-4.04); **Figure 1**.
- GPP was associated with significantly increased risks of death from (**Figure 1**)
  - Sepsis:** 10.23 (5.25-19.94)
  - Respiratory system diseases:** 3.58 (2.49-5.16)
  - Digestive system diseases:** 3.29 (1.44-7.53)
  - Neoplasms:** 2.91 (1.98-4.29)
  - Circulatory system diseases:** 2.44 (1.57-3.79)
- Diagnosis of GPP at any age was associated with a marked reduction in life expectancy compared with people without GPP; **Figure 2**. At age 40, people diagnosed with GPP lost ~18.6 years of life on average.
- Years of life lost due to GPP was slightly higher in males than females up to age 60 but were comparable from age 65+ (**Figure 2**).

## Conclusion

- Excess mortality and shortened life expectancy remain in patients with psoriasis and GPP. Our findings warrant further attention to comorbidities and targeted strategies to reduce morbidity and mortality.