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Conflicts of interest

None disclosed.

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Comorbidities in patients with generalized pustular psoriasis: a nationwide population-based register study

To the Editor: Generalized pustular psoriasis (GPP) is the most severe form of pustular psoriasis.[1,2] A high comorbidity burden has been indicated,[3,4] albeit not comprehensively investigated. In this nationwide study, we have studied the comorbidity profile of GPP and compared it to the general population and patients with psoriasis vulgaris (PV).

Using the Swedish National Patient Register, we identified 1093 GPP cases from 2004 to 2015, which we matched to PV controls (without GPP) (1:3), and to general population controls (1:5). The mean age in all study groups was 56 years and 60% were women. Among GPP cases, 579 (53%) had PV. From the National Patient Register, the occurrence of 34 diseases (selected as relevant based on literature searches and identified by the Swedish version of the International Classification of Diagnostic [ICD-10-SE] codes) were collected and compared between groups using logistic regression. To note, a disease identified with an ICD code in 1 country cannot always be captured in a corresponding way in another country. For example, ICD-10-SE lacks a specific code for the metabolic syndrome.

A subgroup analysis including only GPP cases without PV (n = 514) and corresponding PV controls (n = 1518) was also performed. For detailed description of materials and methods and patient characteristics, see Supplemental Material, Tables 1, 2, and 4, available via Mendeley at https://data.mendeley.com/datasets/wkhfgzcdx2.

Among GPP cases, 70% had any of the selected comorbidities, compared with 46% of the general population controls and 63% of PV controls (Fig 1). The most prevalent conditions in GPP were hypertension, psoriatic arthritis, diabetes type 2, and hyperlipidemia. GPP cases had significantly higher odds ratios (ORs) for any of the selected comorbidities than both the general population controls and PV controls (Fig 2). The largest significant differences between GPP cases and general population controls were for allergic contact dermatitis, Crohn's disease, nonalcoholic fatty liver disease, nephritic nonhypertensive disease, and obesity. For PV controls, the largest differences were for nephritic nonhypertensive disease, Crohn's disease, chronic renal failure, diabetes type 1 and 2, peptic ulcer disease, and psoriatic arthritis. Among these, Crohn's disease, diabetes type 2, and peptic ulcer disease remained significantly elevated in the subgroup analyses (Supplemental Material, Table 3, available via Mendeley at https://data.mendeley.com/datasets/wkhfgzcdx2). In addition, excluding GPP cases with concurrent PV increased the OR for celiac disease (OR, 2.82; 95% CI, 1.05-7.56), sinusitis (OR, 2.57; 95% CI, 1.37-4.83), and stroke (OR, 1.72; 95% CI, 1.14-2.59).

Several diseases are more common in GPP than the general population. GPP has increased occurrence of Crohn's disease, diabetes type 2, peptic ulcer disease, celiac disease, sinusitis, and stroke compared to PV. However, some of the observed associations have a high degree of uncertainty.

There are few studies on the occurrence of comorbidities in GPP populations. Most studies are

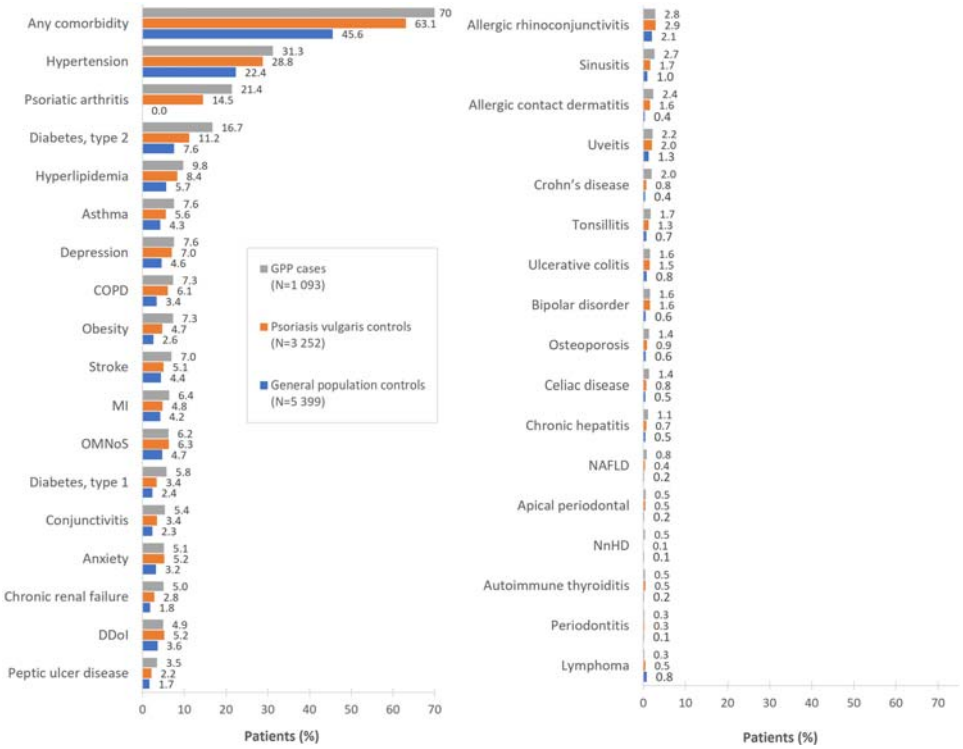

Fig 1. GPP. Occurrence (%) of selected comorbidities in GPP cases and matched psoriasis vulgaris and population-based controls. *COPD*, Chronic obstructive pulmonary disease; *DDoI*, diverticular disease of intestine; *GPP*, generalized pustular psoriasis; *MI*, myocardial infarction; *NAFLD*, nonalcoholic fatty liver disease; *NnHD*, nephritic nonhypertensive disease; *OMNoS*, other malignant neoplasms of skin.

based on small clinical cohorts without adequate coverage of the general population. However, our results are consistent with 2 recent large-scale studies from Japan, which also identified a higher occurrence of several comorbidities in patients with GPP than both the general population and patients with PV.[4,5] The strength of the study was the large population-based National Patient Register, and limitations included a lack of validated GPP diagnosis and potential misdiagnosis.

In summary, the study indicates a higher comorbidity burden in GPP in Sweden than both the general population and PV.

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Conflicts of interest

Dr Schmitt-Egenolf is responsible for dermatology in the project management for the national guidelines for psoriasis at the Swedish Board of Health and Welfare. Drs Norlin and Löfvendahl have been involved in the health

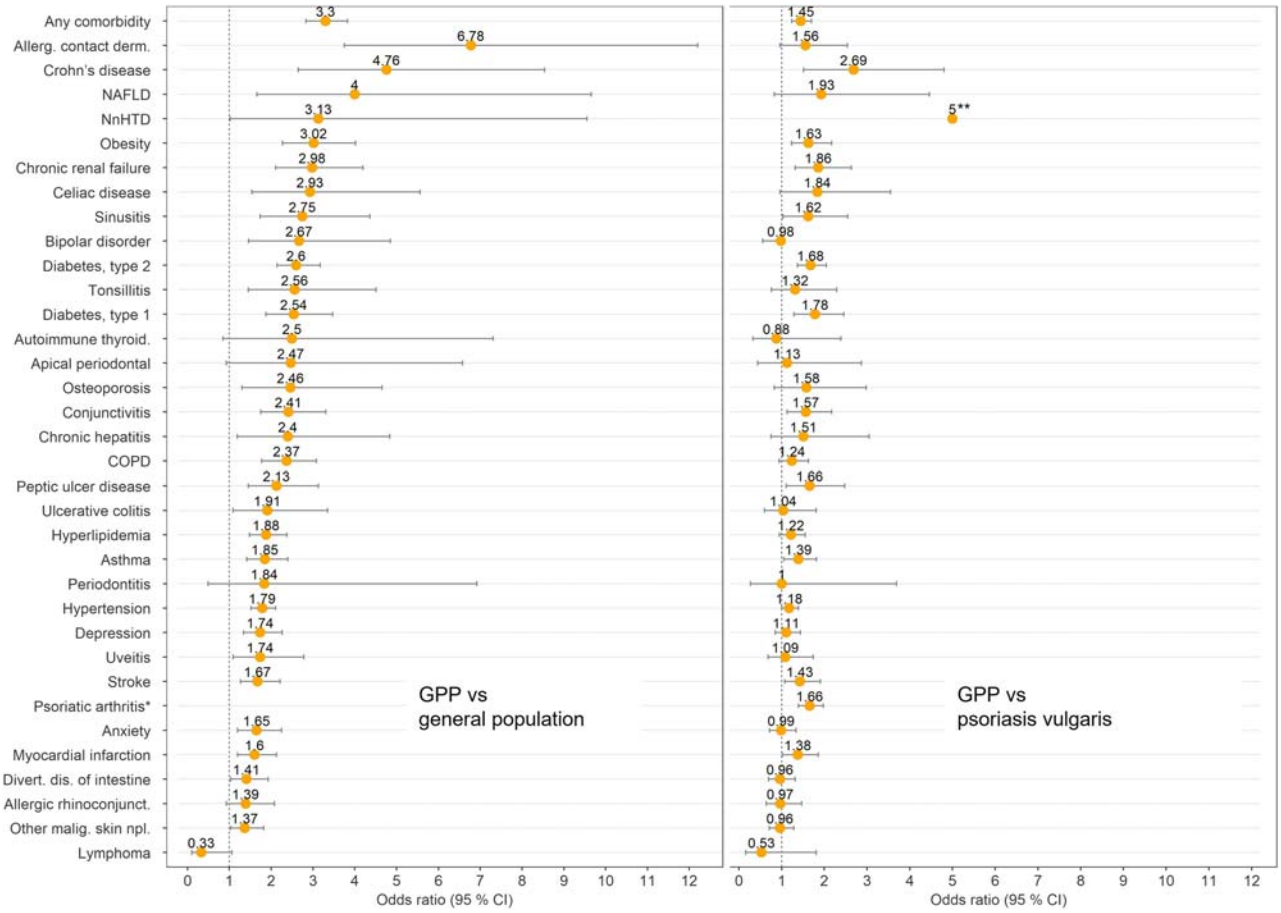

Fig 2. GPP. Odds ratios (95% CI) for selected conditions among GPP cases (N = 1093) compared to matched population-based controls (N = 5399) and matched psoriasis vulgaris controls (N = 3252). Conditions are ordered based on magnitude of odds ratio values for GPP compared to the general population. *Not applicable for general population. **The CI for NnHTD was too wide (1.9-20.9) for illustration. *COPD*, Chronic obstructive pulmonary disease; *GPP*, generalized pustular psoriasis; *NAFLD*, nonalcoholic fatty liver disease; *NnHTD*, nephritic nonhypertensive disease.

economic analyses of the national guidelines for psoriasis at the Swedish Board of Health and Welfare. The authors have no further conflict of interest to declare.

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Dercum's disease: A retrospective cohort study

To the Editor: Dercum's disease (adiposis dolorosa) is a rare condition of unknown etiology occurring most commonly in overweight or obese women.[1,2] It typically involves the growth of painful lipomas or angiolipomas around the extremities and trunk along with metabolic and neuropsychiatric