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Substantially reduced life expectancy in patients with hidradenitis suppurativa: A Finnish nationwide registry study

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Dear Editor,

Hidradenitis suppurativa (HS) is associated with severe comorbidities,[1,2] but has not previously been subject to a systematic evaluation of mortality risk. We conducted a retrospective registry-based case-control study to describe life expectancy and cause-specific death risks in patients with HS.

The Finnish Care Register for Health Care database was queried to identify cases of HS and controls with psoriasis or melanocytic nevi diagnosed in Finland between 1987 and 2014.[3] Dates and causes of death of patients who died before the end of 2015 were obtained from Statistics Finland. Mean ages at death and age- and gender-adjusted hazard ratios with 95% confidence intervals for cause-specific mortality were calculated and compared between the groups (Table 1).

Patients with HS died considerably younger than the controls: mean age at death was 60.5 years in HS cases, 71.1 years in psoriasis and 75.2 years in nevi controls. This elevated risk of mortality could result from the high intensity and long duration of systemic inflammation seen in HS,[2] because chronic inflammation is associated with e.g. atherosclerosis and cancer development.[1,4] A previous

study showed an increased risk for mortality in patients with HS, but the risk did not differ significantly between patients with HS and those with severe psoriasis.[1] Our findings may differ from those of the other study because our psoriasis population likely included patients with both moderate and severe disease. Furthermore, our calculations are not as comprehensively adjusted as were those of the previous study.

Diseases of the circulatory system were the most common causes of death in the HS group, and the risk of dying from these diseases was higher than in controls. Although we could not reliably explore the prevalence of obesity in this setting, it is a frequent comorbidity in patients with HS.[2] Obesity probably plays a major role in increasing the mortality risk in patients with HS, because, as well as causing systemic inflammation, it is a risk factor for type II diabetes, cardiovascular diseases and cancer.[5]

Neoplasms were the second most common cause of death in our HS group. The risk of dying from cancers of the respiratory tract was especially heightened: 32.4% of cancer deaths in the HS group were classified in this sub-category. This result could be expected because of the high use of tobacco in patients with HS.[2] However, the risk of death from respiratory tract cancers was clearly the most elevated in the HS group, even though psoriasis is also associated with excessive smoking.[6] It is therefore important for clinicians to take this risk into account and consider the need of appropriate screening measures.

The risk of death from alcohol-related diseases was considerably higher in the HS group than in nevi controls. Hazardous drinking habits may have also contributed to the higher proportion of deaths in the HS group categorized as ‘accidents and violence’.

In patients with HS, the gender-stratified analysis found no major differences in the main categories of cause-specific risks of mortality. However, an elevated risk of suicide was found in the sub-category level in women with HS (data not shown). This finding has been published previously.[7]

In this registry-based study, we could not verify the accuracy of the diagnoses, and limited data were available for detailed comparisons of patient characteristics between the study groups. Because the data set we used is hospital-generated, patients with mild HS or psoriasis were likely omitted from our study, which may have led to over-representation of severe cases, and, consequently, to over-estimation of the risk for premature death. Additionally, suicides and binge drinking were quite common in Finland during the study period, which may weaken the generalizability of our results.

Patients with HS die at a substantially younger age than those with melanocytic nevi and those with psoriasis, even though patients with psoriasis are known to carry an increased mortality risk.[8] Further studies are required to explore whether HS represents an independent risk factor for early death, or if our results can be fully explained by heavy smoking, obesity, high inflammatory load and comorbidity burden. Notably, patients with psoriasis share these factors,[8] but psoriasis tends to occur later in life than HS, thus subjecting patients to less systemic inflammation. Additionally, HS is probably associated with higher systemic inflammatory load than psoriasis.[2] In conclusion, comprehensive multidisciplinary care is strongly recommended for patients with HS to effectively treat comorbidities and reduce systemic inflammation, with the aim of minimizing the risk for premature death.

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Table 1 Cause-specific mortality and risk of death in patients with hidradenitis suppurativa (n=4379) compared with patients with psoriasis (n=40406) and melanocytic nevi (n=49201) presented as HR, 95% CI.

Cause of death[a]	HS	Psoriasis	Nevi	HS vs. Psoriasis	HS vs. Nevi
All-cause mortality	**498**	**8620**	**4041**	**1.22 (1.12–1.34)**	**2.63 (2.39–2.90)**
Neoplasms[b]	**139 (27.9%)**	**1693 (19.6%)**	**1304 (32.3%)**	**1.79 (1.50–2.13)**	**1.90 (1.59–2.28)**
Lip, oral cavity and pharynx cancers	4 (0.8%)	46 (0.5%)	15 (0.4%)	1.76 (0.62–5.00)	4.82 (1.49–15.6)
Gastrointestinal cancers	16 (3.2%)	206 (2.4%)	192 (4.8%)	1.73 (1.03–2.91)	1.60 (0.95–2.71)
Liver, bile duct and pancreatic cancers	14 (2.8%)	236 (2.7%)	148 (3.7%)	1.30 (0.75–2.26)	1.69 (0.96–2.98)
Respiratory tract cancers	45 (9.0%)	387 (4.5%)	184 (4.6%)	2.56 (1.86–3.53)	4.53 (3.19–6.43)
Breast cancer	10 (2.0%)	89 (1.0%)	170 (4.2%)	1.53 (0.77–3.04)	1.02 (0.53–1.94)
Female reproductive cancers	4 (0.8%)	62 (0.7%)	66 (1.6%)	0.93 (0.33–2.64)	1.02 (0.37–2.84)
Prostate cancer	7 (1.4%)	93 (1.1%)	79 (2.0%)	2.59 (1.18–5.68)	2.04 (0.91–4.59)
Kidney and bladder cancers	6 (1.2%)	114 (1.3%)	60 (1.5%)	1.26 (0.55–2.89)	2.05 (0.86–4.91)
Lymphatic and hematopoietic cancers	12 (2.4%)	184 (2.1%)	150 (3.7%)	1.40 (0.77–2.54)	1.54 (0.84–2.82)
Other neoplasms[c]	21 (4.2%)	250 (2.9%)	219 (5.4%)	1.93 (1.22–3.06)	1.61 (1.02–2.55)
Endocrine diseases[d]	**15 (3.0%)**	**168 (1.9%)**	**60 (1.5%)**	**1.61 (0.93–2.77)**	**3.74 (2.08–6.75)**
Diabetes mellitus	13 (2.6%)	133 (1.5%)	52 (1.3%)	1.82 (1.01–3.29)	3.73 (1.98–7.02)
Diseases of the nervous system	**19 (3.8%)**	**609 (7.1%)**	**419 (10.4%)**	**1.29 (0.81–2.05)**	**2.11 (1.32–3.39)**
Dementia, Alzheimer's disease	10 (2%)	473 (5.5%)	343 (8.5%)	1.19 (0.63–2.25)	1.88 (0.99–3.56)
Diseases of the circulatory system	**168 (33.7%)**	**3455 (40.1%)**	**1479 (36.6%)**	**1.31 (1.12–1.54)**	**3.59 (3.03–4.25)**
Ischemic heart diseases	100 (20.1%)	2109 (24.5%)	822 (20.3%)	1.29 (1.06–1.59)	3.97 (3.18–4.94)
Cerebrovascular diseases	33 (6.6%)	610 (7.1%)	337 (8.3%)	1.60 (1.12–2.29)	3.13 (2.15–4.55)
Diseases of the respiratory system	**18 (3.6%)**	**550 (6.4%)**	**181 (4.5%)**	**0.99 (0.62–1.59)**	**2.99 (1.80–4.97)**
Diseases of the digestive system	**9 (1.8%)**	**269 (3.1%)**	**93 (2.3%)**	**0.75 (0.38–1.47)**	**2.74 (1.33–5.62)**
Diseases of the genitourinary system	**4 (0.8%)**	**85 (1.0%)**	**40 (1.0%)**	**1.72 (0.62–4.79)**	**3.47 (1.18–10.2)**
Alcohol-related diseases	**47 (9.4%)**	**864 (10.0%)**	**89 (2.2%)**	**0.67 (0.50–0.90)**	**5.86 (4.09–8.38)**
Accidents and violence (incl. suicides)	**56 (11.2%)**	**654 (7.6%)**	**274 (6.8%)**	**1.05 (0.80–1.39)**	**2.29 (1.71–3.06)**

HS, hidradenitis suppurativa; HR, hazard ratio; CI, confidence interval. [a]Certain infectious and parasitic diseases, other diseases, and ill-defined and unknown causes of death (in HS group N=18; 3.6%), congenital malformations (N=2;0.4%) and those deaths with no death certificate (N=3; 0.6%) are not shown in the table. [b]There were no melanoma deaths in the HS group. [c]Includes non-melanoma skin cancer. [d]Includes endocrine, nutritional and metabolic diseases.