

Screening for Diabetes Mellitus in Patients with Hidradenitis Suppurativa-A Monocentric Study in Germany

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Introduction

Hidradenitis suppurativa (HS) is a chronic skin disease that is often associated with metabolic disorders. Diabetes mellitus (DM) is a frequent comorbidity in HS. There is currently no established screening for DM in HS patients. The aim of our study was to identify high-risk groups of HS patients that develop DM and to assess the frequency of different types of DM present in HS patients.

Methodology

In this monocentric investigation, data from 99 HS patients were collected. All patients underwent DM screening by the examination of HbA1c levels and fasting blood glucose levels, as well as by the collection of the history of known comorbidities. DM was present with an HbA1c > 6.5% and an HbA1c between 5.7% and 6.4% was considered prediabetes. HS patients with DM were subdivided according to the clusters of the All New Diabetics In Scania (ANDIS) study. The cluster classification was based on the presence of antibodies, age at diagnosis of DM, BMI and HbA1c. We performed a sample size calculation using two-sample comparison (confidence level 95%; significance level 0.05; power 0.8). The first group of the two-sample comparison was the German DM prevalence of 7.2% and the second group was the expected DM prevalence at HS of 20%. We calculated that at least 88 patients were needed for our study.

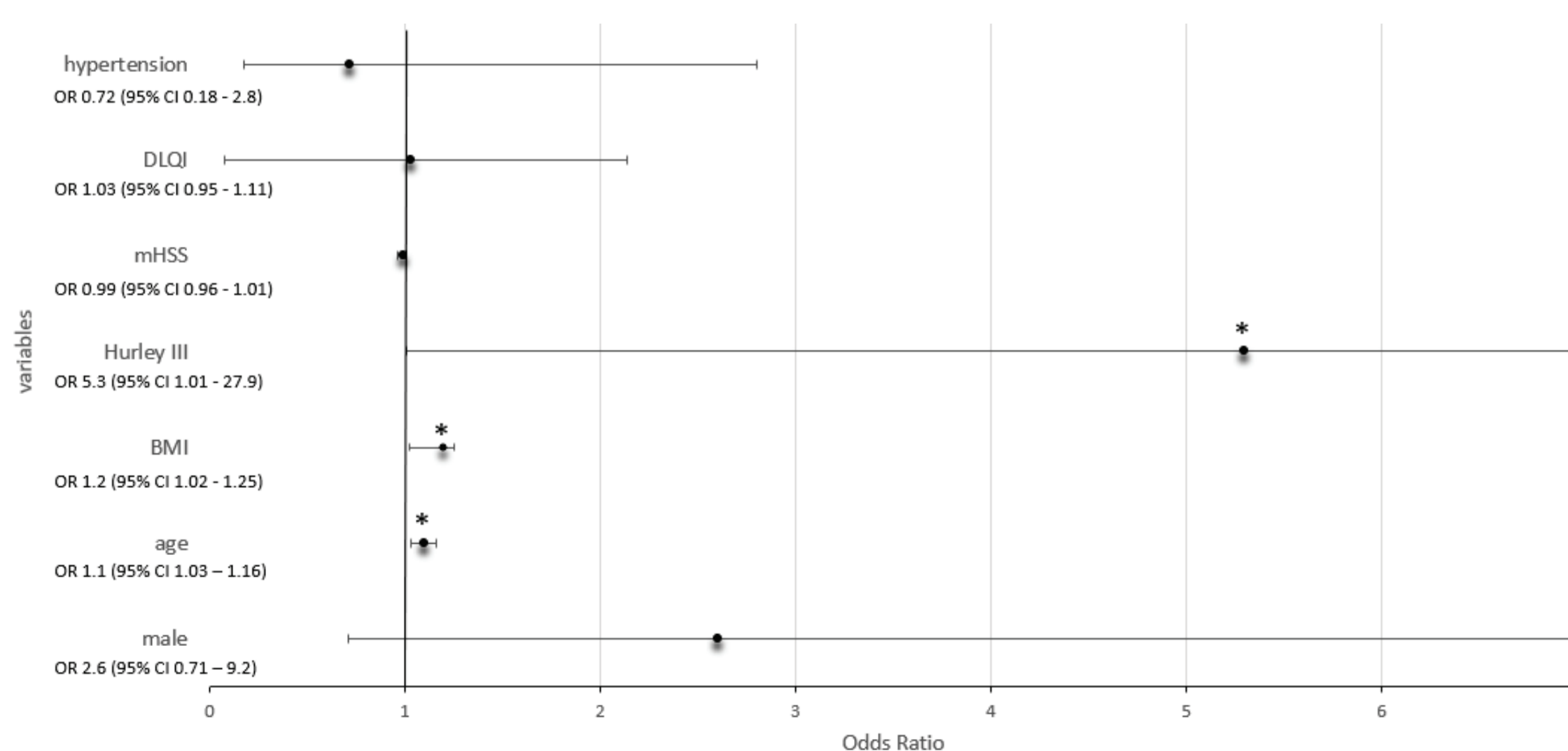


Fig. 1
Figure 1. Odds ratio plot showing the different odds ratios in relation to different variables; * significant result.

Parameters	Odds Ratio (OR)	95% Confidence Interval (CI)	p Value
Male	2.6	0.71–9.2	0.2
Age	1.1	1.03–1.16	0.005 **
BMI	1.2	1.02–1.25	0.019 *
Hurley III	5.3	1.01–27.9	0.048 *
mHSS	0.99	0.96–1.01	0.22
DLQI	1.03	0.95–1.11	0.47
Hypertension	0.72	0.18–2.8	0.6

Fig. 2
Logistic regression with the dependent variable of diabetes mellitus and independent variables from the univariable analyses with a p value ≤ 0.05 (n = 99)

Results

Among the 20.2% of patients that presented with DM, type 2 was by far the most prevalent (19 out of 20 patients). In four patients, screening revealed DM that was previously unknown. The most common DM cluster type in HS was mild obesity-related diabetes (MOD) at 75%, followed by cluster type severe insulin-deficient diabetes (SIDD) at 15%. In our screening, another 23 patients had prediabetes. Moreover, male gender, age, BMI, Hurley stage, modified Hidradenitis Suppurativa Score (mHSS), DLQI and hypertension all correlated with the glycated hemoglobin levels in the HS patients. To determine whether the disease parameters of HS patients were predictive for the presence of DM, we formulated a logistic regression model with DM as the dependent variable in order to calculate the odds ratios. Thus, we determined that age and BMI showed an increased OR of 1.1 (95% confidence interval (CI) 1.03–1.16; p = 0.005) and 1.2 (95% CI 1.02–1.25; p = 0.019), respectively. Interestingly, compared to other Hurley stages, patients at Hurley III stage were 5.3-fold more likely to present with DM (95% CI 1.01–27.9; p = 0.048). The remaining parameters, male gender, mHSS, DLQI and hypertension, were not significant.

Conclusion

In summary, DM was confirmed to present an important comorbidity in HS patients that should also be considered in the treatment of HS. Regular screening of HbA1c or fasting blood glucose levels should be performed in patients from the 4th decade of life with severe forms of HS, especially Hurley stage III. A recommendation to screen for DM in this high-risk group should be included in the forthcoming guidelines on clinical management of HS. Patients with Hurley III have a 5.3-fold increased risk of developing DM compared to Hurley I and II patients. A high BMI was also associated with an increased risk of DM.

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