

## Hidradenitis Suppurativa: Analysis of Google Trends Searches in Europe Between 2009 and 2019

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Dear Editor,

Hidradenitis suppurativa (HS) is a chronic inflammatory disease of the apocrine glands that affects approximately 1% of the general population (1). Google Trends (GT) is a useful website (<https://www.google.com/trends/>) that provides data on the relative search volume of queries (RSVs) and topics over time and across geographical areas (worldwide, country). It allows the seasonal and long-term assessment of trends in public interest. GT is currently used in healthcare research, including dermatology (2–4) and HS (5).

We analysed the data generated through GT for the RSVs on the topic “hidradenitis suppurativa, disease”, worldwide and for 10 European countries from 1 January 2009 to 11 August 2019. The results are displayed as a set of time series. The values are not actual search counts, but are percentages relative to the total searches across the specified geographical area and time period. The resulting numbers are then scaled from 0 to 100, based on the proportion of all searches on all topics. All data used in this study are publicly available, anonymous, and cannot be traced back to identifiable individuals. For this study, we calculated the mean value of RSVs/year/country.

Between 2009 and 2015, worldwide interest in HS remained stable, but increased progressively after 2015/16 (Fig. 1). Almost all countries have experienced a slow increase since 2009. We observed similar trends within neighbouring countries, or those with similar latitudes (e.g. UK and France, Spain and Italy, Sweden and Finland). Countries such as Germany and Russia display a “flatter” trend compared with other countries. Almost all countries showed an increased after 2015/16. We found no seasonality in search trends by country (e.g. summer/winter). Notable isolated peaks were observed; for example, in Germany in April 2012, France in September 2016 and April 2018, and Finland in January 2016. Repetitive peaks were observed in Spain during the weeks 3–9 June 2017, 2018 and 2019.

Overall, interest in HS on the Internet has increased very progressively, as observed previously by Hessam et al. (5). However, in contrast to some other conditions, such as melanoma (2, 3) or vitiligo (4), there does not seem to be any notable seasonality guiding the search trend. Peaks were noted

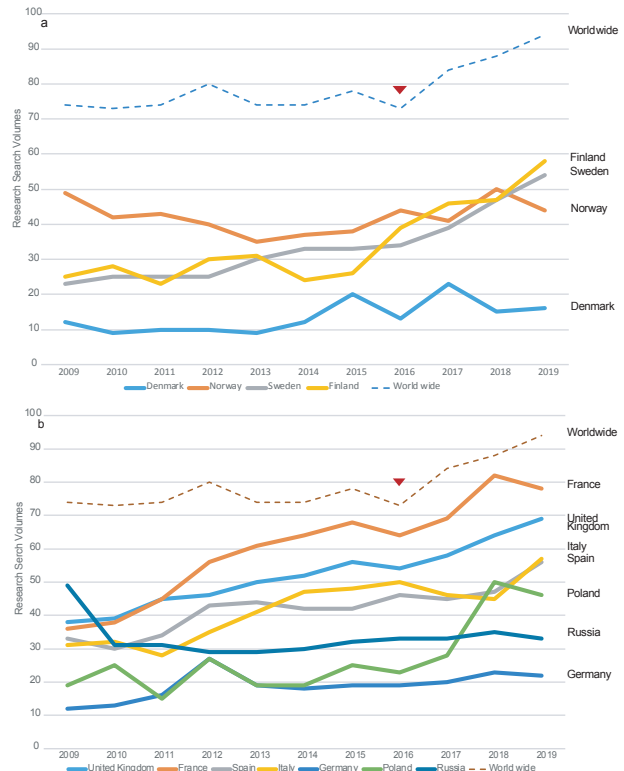


Fig. 1. Interest in hidradenitis suppurativa (HS), reflected by the Google search topic “hidradenitis suppurativa” between 2009 and 2019, adjusted for (a) worldwide and Northern Europe and (b) the rest of Europe. The red arrow indicates the year 2016 after approval of adalimumab by the European Medicines Agency (EMA). Note: Data for Northern Europe and the rest of Europe are on separate figures so as not to overload one figure. In addition, RSV values cannot be compared between countries; only the trends can be compared.

at various periods of time in some countries. Such peaks are usually related to increased media coverage, either because of an information campaign by a patients’ association (e.g. in France in September 2016), national media coverage (e.g. in Finland in January 2019) or health shows on TV reporting on the disease (e.g. in France in April 2018 or Germany in 2012 (5)). HS “world day” or “awareness week” has now been scheduled for the beginning of June. Awareness campaigns explain peaks during the beginning of June; for example, as observed strikingly in Spain. Media reports influence the

increase in number of search queries, underlining the importance of public events and media focus for increasing disease awareness (5). In addition, health-related reality shows, such as *Dr Pimple Popper* in the USA, or *Embarrassing Bodies* in the UK, which show patients with HS in a more dramatic way, may also have an impact. Lastly, the notable increase since 2016 may be related to the approval of adalimumab by the European Medicines Agency (EMA) to treat HS. There is a notable parallel trend between searches for adalimumab and HS (data not shown). This increase may be related to advertisement campaigns by pharmaceutical companies for adalimumab or by patients looking for information regarding this treatment. Limitations of the current study include that GT is not an epidemiological tool; the results include only individuals with access to the internet; and direct comparisons of RSVs between countries is not possible.

*Conflicts of interest:* Dr Nicolas Kluger has served as a consultant to AbbVie, and has received research funding from AbbVie and speaker fees from AbbVie (2015–2016).

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