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Sir,

Determination of seasonal allergic conjunctivitis variation using internet search engine data

A common and potentially debilitating disease, seasonal allergic rhinoconjunctivitis (SAR) can greatly affect the quality of life and is associated with lost productivity.[1] Many sufferers are at the milder end of the disease spectrum and 'fly under the radar' of health services. Consequently, the epidemiology of seasonal allergic conjunctivitis has been difficult to study without expensive large-scale health surveys.[2] Knowledge of the likely timing of local SAR activity peaks is useful at a number of levels. It can help in workforce planning and training. It also allows optimal timing of the use of anti-allergy treatments such as topical mast cell stabilisers, which may take several weeks to have maximal effect. Here we use a validated method of identifying periods of high disease activity to describe the seasonal pattern of SAR in the United Kingdom.

Analysis of internet search engine activity has been used to identify outbreaks of seasonal influenza.[3] We searched the Google trends application (Google, Mountain View, CA, USA) for the terms 'hay fever' and 'hayfever', limited to the United Kingdom and the months of January 2008 through December 2010 (http://www.google.com/trends (accessed 1 February 2011)).

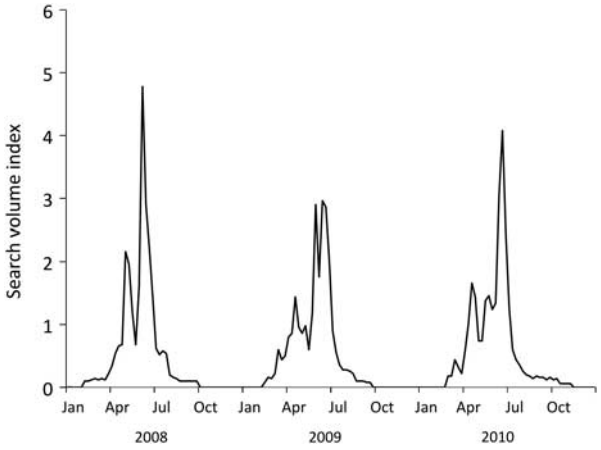

Figure 1 Online search-engine-combined activity for 'hay fever' and 'hayfever' from 2008 to 2010 in the United Kingdom, using the Google search engine. The scale on the *y* axis compares the activity with that at a fixed point in time.

The combined results demonstrate a consistent pattern of online search engine activity (Figure 1). No search activity is seen during Winter. Searches begin in Spring, with a small peak in the search volume index in late April/early May and a larger peak in mid-June. The smaller peak occurs during the peak tree pollen season (eg, birch), while the larger peak occurs during the peak grass pollen season.

We acknowledge that this method is limited by the facts that the study population excludes those without internet access and that the data are from a single search engine, introducing a degree of bias. Further inaccuracy may, in theory, arise from any significant delay between symptom onset and internet search by the sufferer. However, we have previously demonstrated that such analysis is as effective as a large-scale cross-sectional epidemiological study in identifying the peak seasonal activity of SAR[4] and feel that this inadvertent mass collaboration provides useful information as to the timing of peak symptoms of allergic rhinoconjunctivitis in the United Kingdom.

Conflict of interest

The authors declare no conflict of interest.

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