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Clinical and scientific letters

OVERVIEW

Letters not directly related to articles published in *Clinical Medicine* and presenting unpublished original data should be submitted for publication in this section. Clinical and scientific letters should not exceed 500 words and may include one table and up to five references.

Search engines and evidence-based medicine

Editor – We recently embarked on a literature review regarding blood transfusions in cancer patients undergoing surgery and were surprised to discover that the same search string utilised in different search engines could produce significantly different results when searching the same database. In part this can be attributed to variations in the default search strategy employed by different search engines. For example, searching for 'cancer' in PubMed will actually run the search:

'neoplasms'[MeSH Terms] OR 'neoplasms'[All Fields] OR 'cancer'[All Fields]

while in the National Institute of Health and Care Excellence (NICE) healthcare databases advanced search (HDAS) the same search ran as:

cancer.ti,ab [ti=title, ab=abstract]

Meanwhile, in OvidSP it ran:

cancer.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]

In theory, these differences can be overcome by utilising common instructions across all search engines. In practice, even with identical search strings there are disparities in the results returned. To demonstrate this we ran the following search in the MEDLINE database using PubMed, HDAS and OVIDSP search engines:

cancer AND surgery AND (blood AND transfusion) AND (survival OR mortality OR infection)

Each term was restricted to the title and abstract fields only. Results were limited by English language and publication date (1 January 2014–11 June 2014). For searches run on 12 June 2014: PubMed returned 18 hits, HDAS 12 hits and OvidSP five hits. All five papers returned by OvidSP were included in PubMed and HDAS results; similarly all 12 papers returned by HDAS were included in PubMed.

The conclusion is therefore that all searches should be carried out in PubMed. This, however, does not answer the question of why the same search string applied to the same database produces different results based on the search engine used. What influence do search engines have on the data we see? And in an era where evidence-based medicine is the gold standard, how do we ensure we always have access to all the available evidence? ■

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