IMPORTANCE OF KEYWORDS FOR RETRIEVAL OF RELEVANT ARTICLES IN MEDLINE SEARCH

Literature search is an important part of any research and publication activity. In the era of electronic database and explosion of scientific publication, keywords play an immense role in digging out the relevant published material, since these keywords act as "keys" to unlock the desired scientific paper abstracts/full articles from a vast collection of related publications. Hence it is important to include and select pertinent keywords which can easily identify and search relevant references and filter-out the large body of unwanted material. It is, therefore, important that certain words may be added to the abstract of the article which a future researcher might be expected to use as keywords in MEDLINE search. These words should be such that they would make an article which might have remained invisible to the researcher visible on search.

It has been observed that the keywords included along with the abstracts by some journals in the research reports frequently do not identify relevant papers. In view of this problem we have analysed an issue of the Indian Journal of Pharmacology [2002; Vol 34 (Issue 1): 3-58] for the relevance of the keywords used. Keywords were considered as relevant if they are included in the text of the abstract or title of the article as the latter will be visible in MEDLINE search only when the selected keywords are in relevant place, i.e. in the title and/or in the text of the abstract.

The scanned issue of journal had 9 full articles where inclusion of keywords along with the abstract was mandatory. Table 1 shows that only five out of 9 articles had keywords which showed up largely in the text of the abstract (No. 7) or in both of the body of abstract and the title (No. 3, 5, 6, 8). The keywords included in these 5 articles if used as "keys" for capturing related papers during the literature search on MEDLINE would allow their user to largely succeed.

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Total key words mentioned in the abstract</th>
<th>Key word(s) mentioned in the title</th>
<th>Suggested key words for enhancing the retrieval of the relevant abstract/article(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1/5</td>
<td>Multiple sclerosis/ demyelination (instead of myelination)</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>3/5</td>
<td>&quot;Bronchial asthma&quot; (instead of &quot;asthma&quot;) should have been used in title/summary</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>4/5</td>
<td>Without sacrificing the theme of the paper it would be pertinent if &quot;testicular toxicity&quot; had been included in the title Trichopus zeylanicus (plant name)/antifatigue effect/ swimming exercise.</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>4/5</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>2/2</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>4/4</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>4/4</td>
<td>Nimuselide/ aspirin/ ramipril/ 2-mercaptoethanol</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>6/6</td>
<td>Instead of convulsions (in key words) seizures (as given in abstract) should have been mentioned in key words.</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>None</td>
<td>H₂-antagonists (instead of H₂-blockers) Propofol/ thiopentone/ pharmacokinetics</td>
</tr>
</tbody>
</table>
in his/her accomplished task. Two more articles (No. 2, 4) could have been included in this group as both have cited majority of their keywords in the text of the abstract but failed by an important count, i.e. both have failed to include the main theme of the paper in keywords. For example article No. 2 gives "asthma" instead of "bronchial asthma" (which is the main theme of the paper), as the keyword which may confuse with cardiac asthma (pulmonary oedema) and hence will lead to show up of unnecessary irrelevant papers on MEDLINE search. In the same way article No. 4 did not include the name of the investigated plant - *Trichophus zeylanicus* (again the main theme of the paper) in the mentioned keywords, in the absence of which a user researcher may not be able to lay hands on a large amount of important published work.

The remaining two out of 9 articles in the issue had seriously flawed in fulfilling the required criteria. Both the articles have not only failed to include the majority of the mentioned keywords in their text of abstract or title: No. 1 only one, and No. 9 none but like No. 2 and 4 also failed to include the main theme of the papers in keywords. In the first article "multiple sclerosis" which is the basis of the paper is not included in the keywords, whereas the ninth article provides H₂ blocker as the keyword but completely avoided this word every where in the article - be it the title, the abstract, and the body of the paper including the table. Everywhere the word "H₂ antagonist" had been used, except in the keywords where it has been replaced by "H₂ blocker". We are not sure whether MEDLINE includes alternative synonyms for scientific words? If yes, fine; if not, a scientist by using the keyword H₂ blocker along with "pharmacokinetics" (not included in keywords)/intravenous anaesthesia (included in keywords but not mentioned in the abstract) on MEDLINE search might certainly miss some of the important references including the article in question itself. As a result some surfers of the MEDLINE have become wiser as they get some articles by using the "oestrogen" and some more by using the "estrogen" due to differences in UK and US spellings or name of some drugs (e.g. adrenaline/epinephrine). This difference in UK/US spellings/names may be taken care by the MEDLINE for the benefit of global English readers but users of H₂ blocker/H₂ antagonist have to help themselves by using both keywords for retrieving the majority of relevant reference data.

The moral of the letter is: while selecting keywords for your article for publication, only use those words which are related to main theme of the paper, and more importantly have already been mentioned in the body of the title or the text of the abstract to make not only your published paper visible on MEDLINE search but also other related papers along with. A strange keyword outside this ambit will certainly blackout your paper and additionally may create problem to its user while going for a search-ride on the MEDLINE superhighway.

K.K. SHARMA, P.K. MEDIRATTA
Department of Pharmacology, University College of Medical Sciences & G.T.B. Hospital, Delhi-110 095.
e-mail: drkksharma2000@yahoo.com

REFERENCES

Electronic databases of medical literature, nowadays come with very versatile search facilities. In many of them when a 'search word' is entered, title and abstract are also searched apart from keywords. In that case, keywords which are already appearing in title and abstract become redundant and may not serve any purpose. The truth is that the keyword concept is losing its importance because of the sophisticated electronic search facilities. Some databases can even search full text articles when they are available. In the electronic archive of IJP (IJP Archives CD 2001), facilities to search not only the keywords but also the titles are given.

A word which is not found in the title and/or the abstract may be given as a keyword. This word may not be related to the main theme of the study but
may still be relevant to the subject of the study. Sometimes an alternative term may be given as a keyword when the commonly used term finds its place in the title for e.g. Adrenaline and Epinephrine. This ensures that the paper has more chances of being picked up during searches. For this reason it is advocated now that those words which appear already in the title and/or the abstract need not be given as keywords. In the IJP, however, words which appear in abstract are also accepted as keywords because the IJP Archive 2001 does not search abstract but only the title and the keywords.

Contrary to the authors’ conclusions, in the example given by them the keywords ‘H₂ blocker, pharmacokinetics/intravenous anaesthesia’ will indeed pick up the article because the words will be found in the keyword, title or abstract. Using H₂ antagonist instead of H₂ blocker will not make any difference but the article will not be picked up if the user searches H₂ blocker when it is not given in the title or keywords. Not all databases will automatically manage those words with alternative terms or different spellings. Hence it is all the more important to find a place to include the alternative terms - ‘keywords’ come to the rescue.

Authors say a strange keyword will blockout your paper. However strange a keyword may be it does not block out any paper unless someone instructs the search facility to use the NOT option, to specifically exclude the articles with such a keyword.

What the authors say would be true if the search facility provided with a database could search ONLY keywords and nothing else.

Chief Editor- IJP

Promotional offer at 75% discount

"IJP Archives 2001" CD

- Available now at cheaper rates.
- Contains all articles from IJP issues from 1969-2001
- User friendly operations
- Improved search facilities
- Regular price:
  - For individuals & educational institutions Rs. 2000/- (US$ 60; by airmail)
  - For commercial organizations Rs. 5000/- (US$ 120; by airmail)
- Promotional offer:
  First 100 CDs will be available for Rs. 500 (US$ 20; by airmail) each for IPS members and educational institutions. Hurry up to get the CD at 75% discount.