

LETTERS TO THE EDITOR

Italian performance in cancer research

To the Editor: We read with much interest the influential paper by Micheli *et al.*¹ on the performance of Italy in cancer research compared with that of the other 19 wealthiest countries in the world.

The indicators discussed in this 5-year study – the number of publications in the 125 journals indexed in the oncology subject category of Journal Citation Reports, the total impact factor (TIF) adjusted by population and gross domestic product of each country – provide a comprehensive picture of the Italian and other nations' performance in cancer research. Nevertheless, as suggested by the authors, further investigation is necessary. The availability of the data presented by Micheli *et al.*¹ is an important step in the investigational studies relative to cancer research performance in different European countries. To be able to make evidence-based decisions, it is increasingly important to find valid data pertaining to the different subfields of cancer research. Furthermore, it is necessary to widen the search to the non-oncological literature.

We believe this is true for one main reason: most basic cancer research is published in generalist journals, as stated by Cambrosio *et al.*² in his interesting paper describing the emergence and development of translational cancer research. Given that cancer journals publish only about 42% of all articles related to cancer, it is necessary to extend the search to non-oncological periodicals for an accurate assessment of the performance in basic, clinical, and translational research in the European countries.

Further suggestions regarding this topic are provided in a seminal paper by Pincus³, where translational research is defined as a) applying basic discoveries to clinical applications, and b) enhancing adoption of best practices in the community. Clinical research is defined by Pincus as “patient-oriented research, epidemiological and behavioral studies and health services research.”

To contribute to a more comprehensive and effective comparison of the performance in cancer research among European countries, we would suggest the following actions:

a. translate the 3 cancer research subfields – basic, clinical, and translational – into a search strategy in PubMed, the authoritative, freely accessible source of biomedical information, using all the powerful tools it provides;

b. complete the results in terms of number of articles per subfield as well as assessing the TIF of the publications in every European country;

c. evaluate the results of this search and compare them with the overall data reported by Micheli *et al.*, after making the appropriate adjustments.

A sample search has been performed by our Library and Documentation Service to test the viability of this hypothesis. The 3 concepts are not so easy to translate into medical subject headings (MeSH), although an attempt has been made. The search strategy was supervised and approved by Jacque-Lynne Schulman, an expert from the National Library of Medicine (NLM) (personal communication). We propose that a search strategy could be performed on the basis of our sample for finding results in basic research and translational cancer research in the different European countries over the last 5 years. A sample search strategy, restricted to 1 year and only for Italy, is available on request.

Conclusions

On the basis of the cited sample search strategy beginning January 1, 2008 and ending July 13, 2009 in Italy, we obtained these figures:

- 190 PubMed items related to translational research in oncology in Italy;
- 3411 PubMed items related to clinical research (without translational + basic);
- 1062 PubMed items related to basic research (without clinical + translational);
- 4663 PubMed items related to basic research + clinical + translational (this total amount is relatively comparable to the average number of articles per year for overall cancer research in Italy retrieved by Micheli *et al.*¹).

The difference in retrieval results is partly accounted for by the vague definitions of basic/clinical/translational research and the consequent difficulty in article indexation (i.e., assigning MeSH) by expert NLM cataloguers. Above all, translational research is difficult to convert into precise subjects partly because it is an emerging field. The goal of this type of research is to accelerate the exchange between fundamental biology and medical practice, making it a “bridge concept” not easy to translate into a comprehensive search strategy.

Notwithstanding this outcome, it is possible, by performing the same search strategy for every European country, to retrieve matching results and obtain useful hints for policy makers, academic and research institutions, and individual scientists.

As Pincus stated with regard to clinical/translational research³, it is necessary to investigate and create

knowledge about these concepts in order to answer basic questions such as, “What is the distribution of research activities and funding across the different phases and forms of basic, clinical, and translational research in the different EU countries?” “What are the criteria for funding programs in the different subfields?”

Finally, we believe that starting to investigate in this or a similar manner is a real necessity for the development of cancer research in its various complementary forms.

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References

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