

## EDITORIAL

NEUROSURGICAL SYSTEMATIC REVIEWS AND META-ANALYSES  
FOR A DAILY PRACTICE - PART INeurosurgical systematic reviews  
and meta-analyses for a daily practiceAlba SCERRATI <sup>1,2</sup> \*, Luca RICCIARDI <sup>3</sup><sup>1</sup>Department of Neurosurgery, Sant'Anna University Hospital, Ferrara, Italy; <sup>2</sup>Department of Translational Medicine, University of Ferrara, Ferrara, Italy; <sup>3</sup>NESMOS Department, Sant'Andrea Hospital, Sapienza University, Rome, Italy\*Corresponding author: Alba Scerrati, Department of Neurosurgery, Sant'Anna University Hospital, Ferrara, Italy. E-mail: [a.scerrati@gmail.com](mailto:a.scerrati@gmail.com)

To standardize the clinical practice by following accepted guidelines has become the legacy of the modern medicine. When adopting validated protocols, practitioners may discuss with patients about estimated risks and outcomes, eventually reducing medico-legal issues. Furthermore, the availability of clinical guidelines may simplify the decision-making process, limiting the influence of personal opinions while promoting the role of science.<sup>1</sup>

There are some concerns on guidelines and their adoption to be discussed:

- Guidelines are often released by scientific societies whose high-income countries are contributing in, and they are often based on experts' opinions and large centers protocols. This may represent a limit in adopting these suggestions in low-income countries, peripheral centers, and non-academic institutions.

- Practitioners are often used to adopt single centers protocols, over than international guidelines, eventually confirming that the "we have always done it this way" is still poisoning our practice.

- The need for continuously updating the available guidelines is often underestimated, and they are often revised each 5-to-10 years. Therefore, the evidence they are based on could be older than expectable.

- The methodology for producing guidelines is not standardized, ranging from experts' consensus to protocols validation. Therefore, their contents can be difficult to be reproduced, eventually providing some grade of scientific inconsistency.

The level of evidence of scientific investigations is raising when climbing the pyramid of evidence, then leaving the experts' opinions at the base and moving through systematic review (SR) and meta-analyses (MA) on the top (<https://academicguides.waldenu.edu/library/healthvidence/evidencepyramid>).

The methodological consistency of SR and MA allows to both pool data from different studies, then increasing the sample of included patients, and to critically analyze the meta-data and the results independently. While SR consist of review papers with a systematic methodology, MA represent original papers based on a SR process.

Although MA are often considered as useful in case of contradictory available studies only, there is a high contribution of meta-data analysis even in consistent results from multiple published investigations. In fact, MA are also able to meta-analyze their results while considering heterogeneity, eventually assessing the power of effects. Furthermore, SR and MA are based on the available studies, then resulting as the most updated high-level of evidence papers on a specific topic. A single review question is always formulated, then answered through the consistent observation of the methodology in reporting results and their discussion. Therefore, SR and MA can be considered as separated chapters of a Handbook of the Clinical Practice, available for consultation through the online databases.

The interest of scientist toward SR and MA has progressively increased during the last two decades, not only as

readers but also as authors. This may be justified by analyzing the citations-score of these papers, which usually exceed the number of citations that an original paper is supposed to collect within few years. Then, according to the “publish or perish policy”, authors are increasingly interested in publishing papers that may increase their Hirsh index in the shorter time range. Therefore, the number of SR and MA has also increased in the last years, and this has also determined the appearance of repetitive studies.

In conclusion, SR and MA can be considered as the most recent update of relevant topics for our daily practice, and their contents might also contradict those from available guidelines. Nonetheless, some of these papers are repetitive, and their clinical influence is very limited. A wise consultation of medical database, searching for SR and MA answering review questions almost matching our daily cases may result as a useful tool for simplifying the

decision-making process, eventually reducing the risk for medico-legal issues.

The aim of this editorial was to encourage younger neurosurgeons, lacking personal experiences or less inclined to accept the slogan “we have always done it this way”, to rely on high quality evidence based medicine on a daily routine, for the management of their daily clinical-surgical cases.

We hope readers will find this selection of papers, which will be published in three parts, starting with this issue and ending with issue 1 of 2023, as useful for their clinical practice and inspiring for future research.

## References

1. Freddi G, Romàn-Pumar JL. Evidence-based medicine: what it can and cannot do. *Ann Ist Super Sanita* 2011;47:22–5.

*Conflicts of interest.*—The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

*Authors' contributions.*—Both authors read and approved the final version of the manuscript.

*History.*—Manuscript accepted: November 22, 2021. - Manuscript received: November 5, 2021.

(Cite this article as: Scerrati A, Ricciardi L. Neurosurgical systematic reviews and meta-analyses for a daily practice. *J Neurosurg Sci* 2022;66:389-90. DOI: 10.23736/S0390-5616.21.05647-2)