Introduction The Impact Factor (IF) has originally been designed as a bibliometric tool to estimate the relevance of a scientific journal and has as such gained widespread acceptance in the scientific community. It denominates the ratio of all citations received by a particular journal within 1 year and all original research or review articles published by that journal during the preceding 2 years. Discussion Recently, the IF is more and more frequently used to judge the importance of single articles or the scientific achievement of researchers themselves. These approaches are associated with a number of backlashes such as the inability of the IF to reflect citation rates of single articles, the lack of elimination of self-citations and the time frame within which the IF is calculated (i.e., the two preceding years). Thus, for the evaluation of single articles, citation rankings would be though time consuming in their compilation—more adequate. For the assessment of the scientific output of individual researchers, the h-index is emerging as a valuable tool which reflects both the citation rate as well as the number of publications of a given researcher. Conclusion Although the IF is suitable for judging the overall importance of journals, IF rankings should be made solely within the respective subspecialty categorizations to avoid overrepresentation of larger research areas. In conclusion, the IF remains the widest accepted qualitative tool for the benchmarking of journals, though
the assessment of individual scientific quality remains a challenging endeavor.