Starting with this issue of Radiotherapy and Oncology, Jens Overgaard and Michael Baumann will share responsibilities as Editors-in-Chief. This is a good time for some reflection on the role, strategy and editorial policy of the journal for the coming years.

Radiotherapy and Oncology has an outstanding reputation worldwide as a leading journal in the field. It has, as can be easily seen by randomly looking at one issue every year since 1983, not been static but constantly been re-inventing itself. Specific priority fields have changed over the years in parallel to novel developments emerging in radiation oncology and cancer research in general, and in several instances the subjects covered in the journal have even set the trend. Very clearly methodology of the published papers on average has improved from mainly explorative retrospective work to more hypothesis-driven prospective approaches [1]. Revolutionary new areas have been integrated, such as molecular oncology, computer-based treatment planning, combined modality treatments and advanced (bio-)imaging for radiation oncology. Stable motifs of Radiotherapy and Oncology over time have been its inter-professional approach integrating clinical medicine with medical physics and radiobiology and its translational orientation ranging from basic, over preclinical to clinical research. All this forms a highly competitive and solid basis for the future.

Evidence-based radiation oncology

In the field of clinical research, Radiotherapy and Oncology is committed to publish methodologically sound papers contributing importantly to level I and II evidence. This includes large randomized clinical trials, systematic reviews, meta-analysis of randomized trials (ideally based on individual patient data), and case control or cohort studies. These studies require a hypothesis which is investigated using appropriate methods and endpoints in a cohort of patients for which the size has been determined by biometric planning. Retrospective studies may provide interesting new hypotheses for further prospective studies, and sometimes retrospective data constitute the only evidence we have. Therefore retrospective studies are taken into consideration for publication, as long as there is no robust higher level evidence available. Methodological requirements are similar to those of prospective trials: an important hypothesis has to be addressed using sound methodology in an appropriate sample, and the limitations arising from the retrospective nature of the study have to be addressed with state of the art methods in the analysis. Such stringent requirement is almost never met in retrospective monocentric studies, particularly on relatively small and heterogenous patient populations. However, well defined large multicenter retrospective studies based on high quality clinical data and analysed with appropriate multivariate models, often including an exploratory and a separate validation cohort, have led to important insights in many fields in medicine. In radiation oncology most dose–volume data for normal tissue damage which are used in every day clinical practice fall into this field. Also many prognostic parameter studies have used this approach, and it is anticipated that also in the future new ideas on e.g. biomarkers will initially be tested and, if possible, validated on retrospective materials before specific trials are initiated. Here, use of retrospective materials and data obtained from interventional studies are of particular value, as these allow not only to estimate the prognostic but also the predictive power of a given parameter or a group of parameters. In the end, however, the results coming from retrospective exploratory trials need to challenged, whenever feasible by adequate prospective studies. Because of the particular importance of dose for radiation effects on tumors and normal tissues, radiation dose distribution is generally used as a surrogate marker in clinical treatment planning. For scientific studies that use dose-plan comparisons some caveats apply. Evidence is accumulating showing that the same dose–volume parameter (e.g. mean organ dose) may lead to differences in incidence or severity of normal tissue damage for different radiotherapy techniques. In addition, while the rate of one symptom might decrease, another problem may be aggravated when dose distributions are changed. Subvolumes and biological substructures of organs have frequently not been considered in the past, posing important limits to a simplistic use of the surrogate marker radiation dose for generating new evidence. The value of plan comparison studies for evidence-based radiation oncology may therefore be importantly improved by linking these studies to appropriately sized clinical (retrospective or prospective) outcome studies, similar to studies on biomarkers. Vice-versa, clinical or biomarker studies without consideration of the important impact of dose-distribution, will fall short of their aims, and may even come to bluntly wrong conclusions.

Scientific honesty

Honesty in reporting is the indisputable basis of all science and the proper application of knowledge, e.g. in evidence-based...
Radiation oncology as a multi-professional scientific field

Research in radiation oncology has a long multi-professional tradition, which can be broadly divided into the three categories of clinical oncology, medical physics and radiobiology. Often two or all three professional groups are involved in the same projects, reflecting the complexity of research aiming to be clinically relevant. The three scientific fields are well represented in the editorial board of Radiotherapy and Oncology, but for the future extensions beyond the current expertise appear appropriate, e.g. in the fields of imaging and information sciences.

Translational research

Radiation Oncology has a strong track record in translational research, not only aimed to develop innovative approaches which enhance the efficacy of a general treatment strategy but also, as a forerunner in the field of clinical oncology, to tailor the therapy to individual patients, that is personalized medicine. Strong translational research, from bench-to-bedside or, reverse, from bedside-to-bench, needs clinician-scientists and preclinical researchers but also relies on strong basic research, that is on discoveries, as well as on epidemiology. Radiotherapy and Oncology, in addition to expanding its traditional role in radiation oncology, is striving for closer links to discovery research in biology, physics and other relevant fields of science, as well as to epidemiology and health systems and assessments. Input of these fields may, for example, be established through reviews and perspective articles but also through peer reviewed original work complied in topical issues, e.g. the cutting edge research presented at the series of International Wolfsberg Meeting on Molecular Radiation Biology/Oncology [2].

Radiation oncology as integral part of multidisciplinary oncology

Today, cancer patients rarely are treated by only one medical discipline but by a multidisciplinary team. Radiation Oncologists are an integral part of these teams for almost all cancer types, thereby probably representing the broadest among the oncology disciplines. The focus of the journal will continue to be the use of radiation or combined modality treatments in oncology, and manuscripts using other approaches or not related to radiotherapy at all will be considered only under exceptional circumstances. Nevertheless, generation of new evidence in radiation oncology has to consider developments in the other fields of cancer research and care. Discussion of research results in multidisciplinary context will therefore become increasingly important for the authors, but also may necessitate new editorial instruments, including brief topical context articles.

Discussion and debate

It is a somewhat odd tradition that the authors discuss their own results in the same article, however, this allows them to interpret the data, formulate hypotheses and conclusions and to set the work into the context of current knowledge. Nevertheless, this discussion by the authors will naturally be limited by personal bias and selected knowledge, and therefore does not substitute for a critical discussion among peers, which is mandatory to assess the value of results for the field. Such discussion extensively takes place at scientific meetings and in later original or review papers published by peers. Radiotherapy and Oncology will keep the option for letters to the editors. In addition, the journal, in relation to published original work, intends to commission more editorials, and brief perspective articles, discussing the impact of the findings for evidence based radiation oncology and for future research strategies.

Service for authors

Time-line statistics informs authors, reviewers and editors on all steps between submission and rejection or e-publishing, and shows that average handling time has become highly competitive. This does not mean perfect, and future editorial efforts will further reduce the rate of outliers in the editorial office handling. This leaves us with the key issues of response-time of authors between submission of the initial manuscript and the revision, as well as the time needed for the editors to find experts from a limited community who, beside their daily workload, are willing to take over the additional burden to perform a review. Many authors are also peer-reviewers and vice versa, and not infrequently the famous words of German writer and satirist F.W. Bernstein are well fitting “Die schärfsten Kritiker der Elche waren früher selber welche” (the most outspoken critics of elks have previously been member of exactly that species) (http://de.wikipedia.org/wiki/F._W._Bernstein).

Radiotherapy and Oncology will continue to strive to publish the best new science for which promotes evidence based radiation oncology, at the same time continuously improving research standards in our field will further improve the quality of our journal. The editorial policy briefly outlined and to be updated in the coming years will support this process.

References