Dear All,

It is my honor to present you the last issue of the Journal of Contemporary Brachytherapy this year. It closes the fourth year of my service as the Editor-in-Chief. Our collective work of all authors, section editors, reviewers, and Publishing House specialists have led us to this point. The JCB gradually builds up its' IF and number of citations. We were present at the most important events concerning brachytherapy, including ESTRO2022 Annual Congress (Copenhagen, Denmark), PBS Biannual Meeting (Wroclaw, Poland), and GEC-ESTRO Workshops (Nice, France). Thank you all for sharing your knowledge during these gatherings, always fruitful discussions, and for the time spent in joy and friendship. Such professional socializing is of great value, especially during a time of extremely unstable politics and unfair war conflicts. Hopefully, it is all going to end soon.

The JCB 6/2022 issue contains twelve manuscripts: eight clinical papers, three physics contributions, and a single case report.

Although BT, as a discipline, has an established position in various oncological scenarios, its' importance is still being neglected, and the BT training process is inadequate. Manon Kissel *et al*. (France) conveyed a repeated survey among radiation oncology residents. After ten-year gap, despite recent efforts, BT training in France still needs improvements, and the ways of achieving that are discussed.

A German group of specialists performing single fraction-based image-guided HDR-BT of close to renal structures lesions focused on their treatment influence on the extent and rare morphologic changes of radiation-induced nephropathy. Among 35 patients, a decrease in renal function was identified in one case after 12 months, and larger cohorts need to be analyzed to draw firm conclusions on kidney safety. The following paper by a Chinese group from Dalian University assessed the clinical efficacy and safety of so-called 'stereotactic ablative brachytherapy (SABT)' for unresectable or inoperable H&N cancers. SABT stands for precise CT-guided technique of permanent implant application along with dedicated 3D-printed individual templates. As claimed, the treatment produced reasonable local control and mild adverse reactions (no grade 3 or more). The authors evaluated it as a safe, feasible, and minimally invasive approach. Another group from China (Peking) submitted its' results on a deep learning-based two-step OAR auto-segmentation model for BT planning in parotid gland carcinoma. Their novel model demonstrated high efficiency and good agreement with gold-standard manual contours, thus potentially expediting the BT treatment planning process. The third in a row Chinese article (Cangzhou) also concerned CT-guided iodine-125 seeds implantation therapy. In this case series, supplementary local treatment method for small cell lung cancer patients, who could not tolerate standard radiotherapy was presented as safe and effective. Only mild complications were observed, such as cough aggravation, hemoptysis, and pneumothorax. The authors of the fourth paper from China (Nankai University) investigated factors related to stent patency and early eliminating jaundice of malignant obstructive jaundice by bile duct stent combined with iodine-125 seed implantation. As they concluded in an integrated approach, patients with better pre-operative liver function and no biliary tract infection may have longer biliary stent patency and better early jaundice reduction.

Leaving the seeds behind, I would like to highlight a cross-over randomized controlled trial by Rishanthini Dhanapalan *et al*. (India). They compared vaginal gauze packing techniques with or without catheter balloon in cervical cancer HDR-BT. As it is vital for Indian and similar countries' circumstances, combined vaginal packing resulted in a statistically significant reduction in rectal radiation dose compared with standard vaginal gauze packing in cervical HDR-BT using classic tandem and ring applicators. A different group from Mumbai (India) presented retrospective clinical outcomes of patients treated with MUPIT template-based HDR interstitial BT boost for post-operative recurrent gynecological malignancies. They achieved modest clinical results and acceptable late toxicities. The most important factor affecting the outcome was the overall treatment time.

Skipping out from clinical investigations, but sticking to gynecological applications, here I present the physics contribution by Yashiv Dookie *et al*. (Australia). The group investigated *in vivo* source tracking error thresholds for interstitial and intra-cavitary HDR cervical BT. Determining the dosimetric impact of dwell position displacement provided a clinical benchmark for developing pre-treatment verification devices, and an action level for real-time treatment monitoring. It has been established that an *in vivo* source tracking error threshold needs to be patient-specific. Next, Zhengzheng Xu *et al*. (USA) quantified the dosimetric uncertainty caused by needle-tip detection errors in ultrasound images due to bevel-tip orientation differences concerning the location on the template grid in the prostate seed implantation process. As concluded, the beveled needle tip orientation could considerably impact the needle tip detection accuracy, based on which the seeds might be delivered. These errors can lead to a significant dosimetric uncertainty in the prostate seed implantation. In the third physics contribution, Sheridan G. Meltsner *et al*. (USA) shared their feasibility study results on a dual-source strength seed loading for eye plaque BT using Eye Physics eye plaques. Based on that, dual source strength loading can cover tumor margins and decrease the dose to the sclera and, therefore, the adjacent retina. Additionally, it can either reduce or increase the radiation dose to the optic disc and fovea, depending on the location and size of the tumor. This technique may allow the use of a smaller plaque if requested by the ocular oncologist.

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An interesting case report came from Toulouse, France. Guillaume Beziat *et al*. shared their observation on rare uterine cervix-limited acute myeloid leukemia (AML) relapse, showing that BT may be an effective therapeutic option in this setting along with chemotherapy, with good tolerance.

I wish you all a Happy and Peaceful New Year 2023!

Yours sincerely,
Adam Chicheł, MD, PhD
Editor-in-Chief,
Journal of Contemporary Brachytherapy