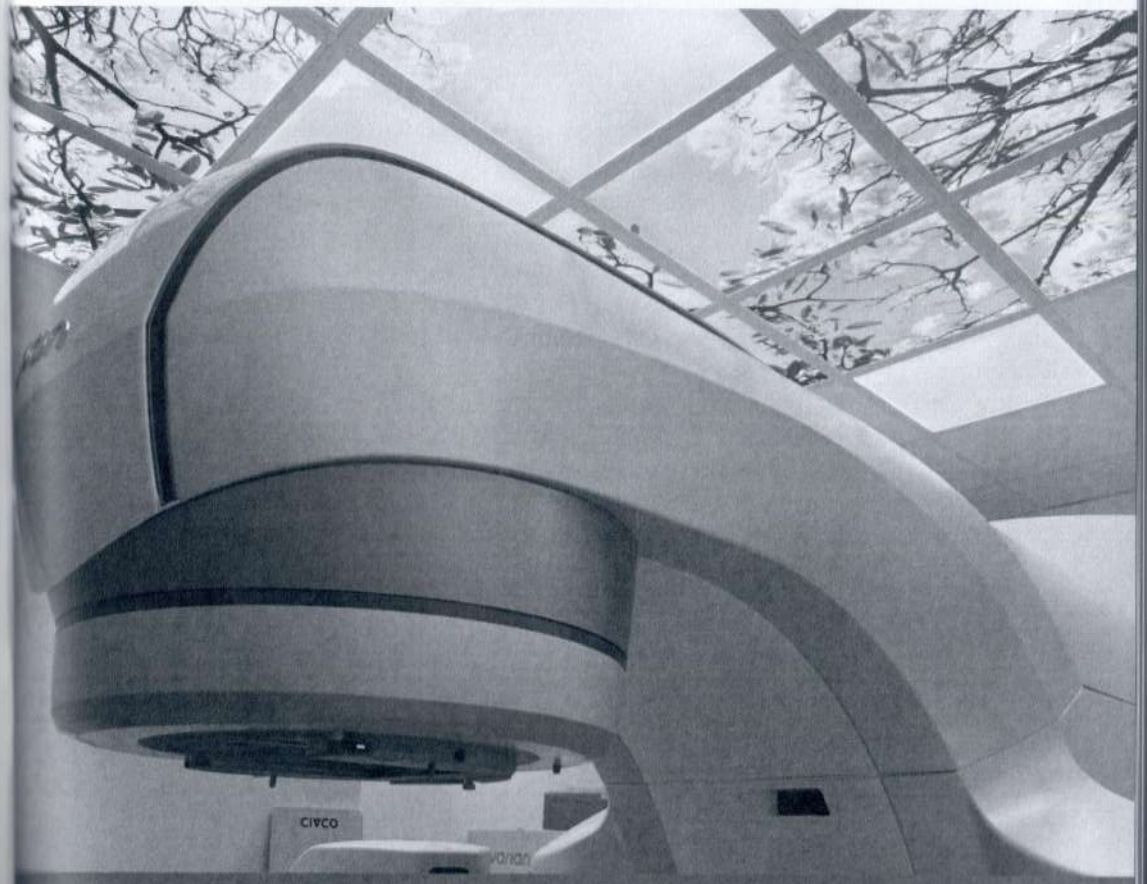
SROC III

Third Serbian Radiation Oncology Congress

Abstract book



November, 2-3rd 2024,
Ethno Complex Vrdnicka kula, Vrdnik

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Dear colleagues and friends,

It is my great pleasure and honor to invite You to participate on the 3rd Serbian Radiation Oncology Congress (SROC III) which will be held in Vrdnik, Serbia.

Fast development and innovations in the field of radiation oncology imposes the need to hold one such gathering in our Region. This event is organized by the Oncology Institute of Vojvodina (OIV) and Faculty of Medicine, University of Novi Sad, and will be supported by the the Government of the Autonomous Province of Vojvodina, City of Novi Sad and Society of physicians of Vojvodina of the Medical society of Serbia. Furthermore, Congress will be traditionally endorsed by the European SocieTy for Radiotherapy and Oncology (ESTRO) and International Atomic Energy Agency (IAEA), with the partnership of Association of Radiotherapy and Oncology of the Mediterranean Area (AROME).

The goals of meeting is to improve knowledge, radiation oncology skills but also to socialize and know each other better. Therefore, our activities are focused on professional development and affirmation of Radiation Oncology in Serbia through the international cooperation with special attention that is given to the cooperation of radiation oncologists, radiation physicists and radiation technicians in the region. At the Congress we will be honored to hear the presentations of some of the worldwide famous experts in the field, which ensures the highest level of quality of the forthcoming meeting.

Finally, I welcome You all to Vrdnik and I wish You all a pleasant stay in this wonderful environment!

Respectfully,
Ass. professor Olivera Ivanov, MD, PhD,
Head of the Department
for Radiation Oncology, OIV
Congress President

Scientific Committee

Full Prof. Vesna Plešinac Karapandžić
Full Prof. Borislava Petrović
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Very accelerated partial breast irradiation in 1 or 2 days

DOI: 10.5281/zenodo.13987388

Jean-Michel Hannoun-Levi

In the context of breast conservative surgery, adjuvant irradiation plays a crucial role by improving both local control and overall survival. Regarding radiation therapy regimens, one of the main subjects related to adjuvant breast irradiation has been the investigation of new hypofractioned and accelerated regimens with the goal of shortening significantly the total treatment time. Moderate hypofractionation was first investigated in the START B prospective phase 3 randomized trial (40Gy/15f/3w) following by ultra hypofractionation with the FAST-Forward phase 3 randomized trial (26Gy/5f/1w). More specifically for low-risk tumors, multicatheter interstitial brachytherapy (MIBT) is another validated option since the publication of the GEC-ESTRO phase 3 randomized trial results.

As hypofractionated breast irradiation regimens was proposed to achieve more acceptable, comfortable and observable treatment, new protocols of very accelerated PBI (VAPBI) were investigated in order to perform adjuvant ultra-hypofractionated irradiation after lumpectomy in less than 4 treatment days; current results are encouraging in terms of oncological outcome as well as toxicity profile. The phase 2 TRIUMPH-T trial used a 3-fraction APBI protocol with HDR MIBT or multi-channel balloon devices. In a phase 2 prospective trial, the GEC-ESTRO tested two MIBT based VAPBI regimens over 2 to 3 days (25Gy/4f/2d or 22.35Gy/3f/2d). The single fraction was initially investigated in the SiFEBI phase 2 prospective trial by using a total dose of 16 Gy (HDR MIBT). Oncological outcome between APBI (30.1-34Gy/7-10f) and VAPBI (16Gy/1f/1d) was compared in a homogenous population of elderly women with low-risk breast cancer with no significant difference between the two patient groups regarding oncological outcome and late complication rates.

VAPBI based on 1 or 2 treatment days using HDR MIBT could represent an attractive option for achieving excellent local control in a well-defined breast cancer population, avoiding, at the same time, the burden of external beam radiation therapy.

Keywords: breast cancer, ESTRO, brachytherapy, PBI, VAPBI

Radiodermatitis and Radionecrosis During and After Radiation Therapy for Vulvar Cancer: A Case Report

DOI: 10.5281/zenodo.13988593

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Introduction: Squamous cell vulvar carcinoma is a tumor with limited radiosensitivity, requiring high doses of radiation therapy (RT) for favourable therapeutic response. The irradiated volume must include not only the tumor and regional lymphatics, but also surrounding skin (groin, pubis, vulva, perineum and sometimes the skin of the gluteal region), which increases the likelihood of radiodermatitis that is an expected complication, whether early or late. Timely and appropriate local care can help delay grade I-II skin reactions and prevent severe reactions (grade III-IV radioepithelitis) and minimize interruptions of RT treatment, which can negatively affect therapeutic outcomes. Treatment of radionecrosis (grade IV) is complex and often requires hospitalization.

Case Report: A 74-year-old woman with FIGO stage IIIb squamous cell vulvar carcinoma underwent radical RT. She received a total dose (TD) of 60Gy to the vulva and 54Gy to the regional lymphatics, with an additional brachytherapy boost to the residual tumor (2x7Gy). After 22 radiation fractions, the patient developed grade II/III radiodermatitis despite intensive local care. The condition required three short treatment pauses, during which topical corticosteroids were applied. Once the skin recovered, RT was completed. However, three months post-treatment, radionecrosis of the vaginal introitus and vulva was observed due to inadequate post-radiation care, despite complete tumor regression. This complication required hospitalization and complex local and systemic therapy (antibiotics, infusions).

Conclusion: Early detection and complex care for radiodermatitis (e.g., Gentian violet 1% solution, charcoal and silver-based dressings, hyaluronic acid vaginalette) can reduce treatment pauses and improve outcomes.

Keywords: vulvar carcinoma, radiodermatitis, local care

The Role of CEA and CA 19-9 Tumor Markers in Predicting Response to Neoadjuvant Radiochemotherapy in Locally Advanced Rectal Cancer

DOI: 10.5281/zenodo.13988656

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Introduction: Locally advanced rectal cancer (LARC) poses significant challenges in oncology, often necessitating multimodal treatment strategies. Neoadjuvant chemoradiotherapy (nCRT) followed by surgery is the standard approach for LARC management, aimed at improving local control and facilitating sphincter preservation. Tumor markers, such as carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA 19-9), have been explored as potential predictors of treatment response and prognosis in various malignancies. This study aimed to evaluate the association between pre- and post-treatment levels of CEA and CA 19-9 and tumor response in LARC patients undergoing nCRT.

Material and Method: We conducted a prospective study including 75 patients with LARC who underwent long-course CRT between June 2020 and January 2022. Treatment involved radiotherapy using volumetric modulated arc therapy-simultaneous integrated boost, along with con-

comitant chemotherapy (5-fluorouracil and leucovorin) administered during the first and fifth weeks of radiotherapy. Tumor response was assessed eight weeks after the completion of nCRT. Patients were categorized as responders (complete clinical response [cCR] and TRG1-2 postoperative categories) or non-responders (TRG3-5) based on the Mandard classification. Levels of CEA and CA 19-9 were measured before treatment initiation and at the completion of therapy.

Results and Discussion: Initial elevated levels of CEA were observed in 41.3% of patients, decreasing to 9.3% post-treatment. Similarly, initial elevated CA 19-9 levels were present in 8% of patients, reducing to 1.3% post-therapy. While no significant association was found between initial CEA levels and treatment response, a significant difference was observed between patients with post-treatment CEA and CA 19-9 levels within reference values compared to those with persistently elevated levels ($p < 0.05$). These findings suggest that nCRT leads to a significant reduction in CEA and CA 19-9 levels, potentially indicating a favorable treatment response and improved outcomes in LARC patients.

Conclusion: Our study highlights the potential utility of CEA and CA 19-9 as predictive markers for treatment response in LARC patients undergoing neoadjuvant therapy. The significant reduction in tumor marker levels post-treatment suggests a potential role for these markers in assessing therapeutic efficacy and predicting patient outcomes. However, further validation on a larger patient cohort is warranted to confirm these findings and establish the clinical utility of tumor markers in guiding treatment decisions for LARC.

Keywords: locally advanced rectal cancer, neoadjuvant chemoradiotherapy, hematological toxicities.

Molecular Biomarkers in Prediction of Radiation-Induced Pneumonitis After Stereotactic Body Radiotherapy for Lung Cancer

DOI: 10.5281/zenodo.13990353

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Stereotactic Body Radiotherapy (SBRT) has become the golden standard for treating early-stage, inoperable non-small cell lung cancer (NSCLC) due to its precision and high efficacy. However, radiation-induced pneumonitis (RP) can occur as a significant adverse effect that can negatively impact patient outcomes. The frequency of symptomatic RP in SBRT-treated patients varies widely, reported in the range of 9% to 28%. The incidence and severity of RP are influenced by various factors, including radiation dose/fractionation regimen, V20, V5, mean lung dose, tumor size and location, and previous pulmonary disease (i.e. interstitial lung disease-ILD). The identification of personalized biomarkers for predicting the likelihood of developing RP is essential for better risk stratification and personalized treatment planning. Krebs von den Lungen-6 (KL-6) and surfactant protein D (SP-D) are two biomarkers that made the focus of interest being identified as prognostic indicators for RP. They are associated with damaged alveolar type II cells suggesting treatment-related ILD and patient more susceptible to radiation. Elevated serum levels of these biomarkers prior to radiation are poor prognostic markers that correspond with increased incidence and severity of RP. Advances in identifying individual risk factors, such as the identification of prognostic biomarkers like KL-6 and SP-D, enhance the ability to predict and mitigate the risk of RP, ensuring that SBRT continues to be a viable and preferred option for patients with early-stage inoperable NSCLC.

Keywords: molecular biomarkers, stereotactic body radiotherapy, lung cancer, radiation pneumonitis