and functional outcomes. We consider this bladder sparing treatment as the gold standard in bladder preserving therapies. A multidisciplinary collaboration is indispensable.

SP-0449 Stepwise Development of Personalized Radiation Therapy for Bladder Cancer

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Abstract text
The introduction of new technology has revolutionized the way radiotherapy is delivered for bladder cancer: developing from the use of basic conventional techniques to a high precision, personalized approach. In order to demonstrate that the new technology is beneficial to the patient and to ensure its safe implementation, there is a need to integrate clinical expertise, patient values and research evidence into the development of evidence-based best practices (EBP). Since 2005, a series of prospective and retrospective studies were conducted to investigate different aspects of bladder radiotherapy, such as the accurate definition of treatment volumes, quantification of inter- and intrafractional bladder volumes changes and surface displacements, conformity and normal organ avoidance for dose distributions, mode and frequency of image-guidance interventions, reliability of image guidance surrogates and the cost/benefit of adaptive strategies. At each stage, the impact on geometric and dosimetric precision was quantified as evidence to substantiate the use of EBPs. Currently all bladder patients at our institution are treated with daily image guidance using CBCT with soft tissue alignment, with dose delivered to an individualized clinical target volume and planning target volume using IMRT.

SP-0450 Radiosensitization strategies for the treatment of bladder cancer

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Abstract text
Bladder preservation is increasingly being accepted as an important alternative to radical cystectomy for muscle-invasive urothelial cancers. This talk will cover the evidence for bladder preservation using radiotherapy with radiosensitisation, dose, fractionation and radiotherapy technique. There are no robust ways to stratify patients for treatment, but there are a number of promising candidates. An overview of novel biomarkers for stratification will be presented.

Joint Symposium: ESTRO-EACR: Radio-immunotherapy: from concept to clinical practice

SP-0451 Radiation-induced microenvironmental changes in cancer

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Abstract not received

SP-0452 Radiotherapy and cisplatin increase immunotherapy efficacy by enabling local and systemic intratumoral T-cell activity

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Abstract text
To increase cancer immunotherapy success, PD-1 blockade must be combined with rationally selected treatments. Here, we examined in a poorly immunogenic mouse breast cancer model the potential of antibody-based immunomodulation and conventional anti-cancer treatments to collaborate with anti-PD-1 treatment. One important requirement to improve anti-PD-1-mediated tumor control was to promote tumor-specific cytotoxic T cell (CTL) priming, which was achieved by stimulating the CD137 costimulatory receptor. A second requirement was to overrule PD-1-unrelated mechanisms of CTL suppression in the tumor micro-environment (TME). This was achieved by radiotherapy and cisplatin treatment. In the context of CD137/PD-1-targeting immunotherapy, radiotherapy allowed for tumor elimination by altering the TME, rather than intrinsic CTL functionality. Combining this radioimmunotherapy regimen with low-dose cisplatin improved CTL-dependent regression of a contralateral tumor outside the radiation field. Thus, systemic tumor control may be achieved by combining immunotherapy protocols that promote T cell priming with (chemo)radiation protocols that permit CTL activity in both the irradiated tumor and (occult) metastases.

SP-0453 Targeting DNA repair to improve immune-surveillance and restrict cancer growth

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Abstract text
Colorectal, ovarian, endometrial and other tumors carrying defects in DNA mismatch repair often show favorable prognosis and indolent progression. The genomes of these tumors bear hundreds of thousands of somatic mutations, a feature which fosters cancer progression and might lead to rapid evolution of resistance to targeted therapies. Recent evidences that a subset of MSI (microsatellite instable) tumors respond prominently to immune checkpoint blockade led to the hypothesis that the presence of high number of somatic mutations may be responsible for effective immune-surveillance. However, several reports indicate that a relevant fraction of hyper-mutated tumors have unfavorable prognosis and do not respond to immune-modulators. To understand the molecular and functional bases of response to immune checkpoint inhibitors, we genetically inactivated MutL homolog 1 (MLH1) in colorectal, breast and pancreatic mouse cancer cells. The growth of MMR deficient cells was comparable to their proficient counterparts in vitro and upon transplantation in immune-compromised mice. However, isogenic MMR deficient cancer cells, acquiring alterations over time, were unable to form tumors when