

W5: Radiotherapy of female pelvic malignancies – A case based review of the latest trends and research opportunities to minimize treatment side effects and manage complications of radiotherapy on the lower urinary tract and pelvic floor

Workshop Chair: Amy Dobberfuhr, United States
12 September 2017 07:30 - 08:30

Start	End	Topic	Speakers
07:30	07:50	Radiotherapy of cervical and endometrial cancer: Selecting the appropriate treatment approach and minimizing unintended radio-toxicity to benign tissues	Elizabeth Kidd
07:50	08:10	Evaluation and management of the acute and late stage complications of radiation on the bladder and lower urinary tract	Amy Dobberfuhr
08:10	08:25	Treatment of radiation induced pelvic floor and vaginal dysfunction in cervical and endometrial cancer survivors	Bertha Chen
08:25	08:30	Discussion	All

Speaker Powerpoint Slides

Please note that where authorised by the speaker all PowerPoint slides presented at the workshop will be made available after the meeting via the ICS website www.ics.org/2017/programme Please do not film or photograph the slides during the workshop as this is distracting for the speakers.

Aims of Workshop

This course will outline the epidemiology of cervical and endometrial cancer throughout the world. Treatment options will be discussed with an emphasis on pelvic radiotherapy and the latest trends to minimize treatment related side effects. Representative patient case presentations will be used to highlight the urologic and gynecologic management options for acute and late complications of radiotherapy on the bladder, lower urinary tract, vagina and pelvic floor.

Learning Objectives

- 1) What are the potential urinary side effects from pelvic radiation and brachytherapy, and how can this toxicity be decreased or minimized for cervical and endometrial cancer patients requiring radiation therapy as part of their treatment?
- 2) What are the latest trends for managing the acute and late complications of radiotherapy on the bladder, lower urinary tract and pelvic floor?
- 3) Where should future research efforts be directed to minimize and treat the long term unintended side effects of pelvic radiotherapy in women?

Learning Outcomes

- 1) Discuss different radiation treatment approaches for cervical and endometrial cancer and potential acute and long-term urinary side effects of pelvic radiotherapy and brachytherapy.
- 2) Describe the management of radiation induced bladder dysfunction in the acute phase immediately following pelvic radiotherapy
- 3) Outline the latest treatment options/considerations for late stage radiation induced bladder and pelvic floor dysfunction

Target Audience

Providers (MD, NP, PA, RN) who evaluate and care for women with lower urinary tract symptoms, hematuria, prolapse or pelvic floor dysfunction following pelvic radiotherapy

Advanced/Basic

Advanced

Conditions for Learning

This course will be interactive, with specific case examples presented throughout the workshop session, and a question-answer session at the conclusions of all presentations.

Suggested Learning before Workshop Attendance

Workshop attendees will be provided with suggested reading which will complement the lectures, case presentations and discussion.

Suggested Reading

- De Boer SM, et al. Long-Term Impact of Endometrial Cancer Diagnosis and Treatment on Health-Related Quality of Life and Cancer Survivorship: Results From the Randomized PORTEC-2 Trial. *Int J Radiat Oncol Biol Phys.* 2015, 93(4):797-809 PMID: 26530748.
- Katepratoom C, et al. Lower urinary tract dysfunction and quality of life in cervical cancer survivors after concurrent chemoradiation versus radical hysterectomy. *Int Urogynecol J* 2014, 25(1): 91-6. PMID: 23818129.
- Vistad I, et al. Postradiotherapy morbidity in long-term survivors after locally advanced cervical cancer: how well do physicians' assessments agree with those of their patients? *Int J Radiat Oncol Biol Phys.* 2008, 71(5):1335-42. PMID: 18355976.
- Zwaans BM, Chancellor MB, Lamb LE. Modeling and Treatment of Radiation Cystitis. *Urology.* 2016 Feb;88:14-21. PMID: 26571081.
- Payne H, et al. Chemical- and radiation-induced haemorrhagic cystitis: current treatments and challenges. *BJU Int.* 2013 Nov;112(7):885-97. PMID: 24000900.
- Rajaganapathy BR, et al. Advances in Therapeutic Development for Radiation Cystitis. *Low Urin Tract Symptoms.* 2014 Jan;6(1):1-10. PMID: 26663493.
- Bernard S, et al. Effects of radiation therapy on the structure and function of the pelvic floor muscles of patients with cancer in the pelvic area: a systematic review. *J Cancer Surviv.* 2016 Apr;10(2):351-62. PMID: 26314412.

Elizabeth Kidd

- Dr. Kidd will provide background for the types of radiation treatment used for managing endometrial and cervical cancers, and representative cases will be discussed to help demonstrate specific genitourinary toxicity commonly experienced by patients. Relevant endometrial and cervical cancer epidemiology will also be covered along with existing data on the time course for bladder toxicity.
- Additionally, recent studies related to treatment advances for gynecologic cancers that help decrease urinary toxicity will be discussed, including: 1) the use of brachytherapy instead of external beam radiation for early stage high-risk endometrial cancer patients, 2) the use of intensity modulated radiation therapy (IMRT) to decrease dose to the bladder compared to standard pelvic external beam radiation therapy, and 3) the use of image-guided brachytherapy for intact cervical cancer for better defining the target volumes, organs at risk and normal tissue dose constraints.

Take home message: Treatment of endometrial and cervical cancers often require radiation, which can cause genitourinary toxicity. Gynecologic cancer patients can live many years after their treatment, making long-term urinary tract toxicity a particular concern. Recent advances in treatment can help decrease the dose to the bladder and urinary tract.

Amy Dobberfuhr

- Dr. Dobberfuhr will review the pathophysiology of the early, latent and chronic phases of radiation induced bladder dysfunction. A systematic approach to the evaluation of radiation induced lower urinary tract complications in the female will be outlined, with an emphasis on: stress urinary incontinence, detrusor overactivity, mixed urinary incontinence, loss of bladder compliance, urothelial hemorrhage, fistula and erosion.
- Dr. Dobberfuhr will present an evidence based review of the most appropriate management strategies for both 1) acute genitourinary radio-toxicity during the early-phase after radiotherapy and 2) late-phase bladder and lower urinary tract complications.

Take home message: Management of the acute and long term adverse effects of radiation induced bladder dysfunction can be complicated and frustrating. Since chronic radiation damage is generally irreversible, the available treatment options are primarily palliative and should be focused on symptom management.

Bertha Chen

- Dr. Chen will review the clinical presentation and evaluation of radiation induced pelvic floor and vaginal dysfunction in women. Her discussion will include data on the impact on quality of life and treatment options for dyspareunia, pelvic pain, pelvic floor dysfunction and vaginal stenosis.
- Since urinary incontinence and pelvic organ prolapse is prevalent in women, a significant portion of female cancer patients may require management of these conditions before and after radiation. Dr. Chen will review the potential negative effects of radiation therapy on pelvic organ prolapse and discuss management options.
- Dr. Chen will provide a brief overview of the current areas of research in radiation induced bladder and pelvic floor dysfunction, and discuss areas of translational research.

Take home message: Radiation induced pelvic floor and vaginal dysfunction is common. Awareness, early identification of the problem by the medical team, and early institution of treatment can help increase cancer survival wellbeing.