XXXIII CONGRESSO NAZIONALE AIRO

AIRO2023

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PALAZZO DEI CONGRESSI

Radioterapia Oncologica: l'evoluzione al servizio dei pazienti

Update sul tumore della vagina: dall'intensificazione del trattamento alle evidenze in termini di constraints e di terapia di supporto

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Radioterapia e Oncologia clinica

VAGINAL CANCER

- Primary vaginal cancers are rare (only 1–2% of all gynecologic malignancies).
- It is diagnosed only in patients with no involvement of the cervix or vulva or in the absence of recurrence of cervical or vulvar cancer after 5 years from treatment
- Ninety percent of cases are squamous cell carcinomas; most common location is the upper posterior 1/3 of the vagina.
- Given the rarity of primary vaginal cancer, there are no reliable recommendations for primary treatment, surveillance, and management after recurrence. It is the only cancer of the female genital system that has no clinical practice guidelines in the National Comprehensive Cancer Network (NCCN).
- Modern management of vaginal cancer has been extrapolated from the successful outcomes of cervical cancer treatment

Yang et al. Gynecologic Oncology 159 (2020) 456–463

FIGO CANCER REPORT 2018: RADIOTHERAPY

- EBRT to the pelvis includes the external iliac and obturator nodes as per standard of care. In addition, the inguinal nodes may be included if the tumor is in the distal vagina.

- The optimal or lower threshold dose is 70 Gy, which has been shown to improve outcomes. Doses higher than 70 Gy result in significant grade 3 and 4 toxicities.

- Intensity modulated radiation therapy (IMRT) is an advanced form of radiation that allows for higher dosages of radiation to be delivered to the cancer. Although studies in vaginal cancer are limited, this form of radiation may allow improved dosages to the cancer, with fewer adverse effects because dose to the adjacent structures is limited

- Modern management of vaginal cancer often combines concurrent chemotherapy such as cisplatin or 5FU. This has been extrapolated from the successful outcomes of this treatment with cervical cancer. However, most studies using chemoradiation in vaginal cancer are limited owing to the small numbers of cases and lack of comparison to radiation on its own.

- Chemoradiation may be considered in the treatment of vaginal cancer following a more recent retrospective review suggesting a potential improvement in overall and disease-free survival. (*Miyamoto & Viswanathan 2013*) Although this was a small review (71 patients), it showed a significant difference between both overall survival and disease-free survival when comparing women who received radiation alone versus chemoradiation as primary treatment (three-year overall survival of 56% versus 79% and three-year disease-free survival of 43% versus 73%).

Adams & Cuello. Int J Gynecol Obstet 2018; 143 (Suppl. 2): 14–21

Radiotherapy and Oncology 186 (2023) 109662

Contents lists available at ScienceDirect

Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com

Guidelines

ESTRO/ESGO/SIOPe guidelines for the management of patients with vaginal cancer ☆

Remi Nout [a,*], Gabriele Calaminus [b], François Planchamp [c], Cyrus Chargari [d], Sigurd F. Lax [e], Hélène Martelli [f], W Glenn McCluggage [g], Philippe Morice [h], Maja Pakiz [i], Maximilian Paul Schmid [j], Jonáh Stunt [a], Beate Timmermann [k], Christian Vokuhl [l], Daniel Orbach [m], Christina Fotopoulou [n]

Management of vaginal cancer

- Two strategies for initial management with curative intent could be discussed: surgical resection versus primary (chemo)-radiation therapy.
- Both strategies (initial surgery or definitive radiation therapy) seem to offer similar survival benefit so it is more about weighing the risks and iatrogenic morbidity that each patient will have from each approach tailored to her needs to decide for the best treatment strategy. The decision for the most appropriate treatment of choice will depend on the operability and location of the tumour but also on patients' wishes
- Definitive platinum-based chemoradiotherapy consolidated by a brachytherapy boost is the preferred treatment of choice for the management of patients with locally advanced or node positive vaginal cancer

Nout et al. Radiotherapy and Oncology 186 (2023) 109662

Definitive chemoradiotherapy

- EBRT can be applied as concomitant chemoradiotherapy with total dose of 45 to 46 Gy (1.8 to 2.0 Gy per fraction) and single agent radiosensitizing chemotherapy, preferably cisplatin (weekly 40 mg/m2) so that definitive radiotherapy is not compromised.
- EBRT may also be applied without concomitant chemotherapy according to treatment selection (i.e. patients unfit for any chemotherapy).
- Tumour and lymph node - related target volume for intensity modulated radiotherapy (IMRT) includes the primary vaginal tumour, the vagina and the adjacent tissues such as the paravaginal space, parametria, uterine cervix if in situ, and the pelvic lymph nodes (obturator, internal, external and common iliac, presacral).
- In case of a primary tumour located in the lower third of the vagina, inguino-femoral lymph nodes are part of the EBRT target volume.

Nout et al. Radiotherapy and Oncology 186 (2023) 109662

Update on:

- Dose intensification

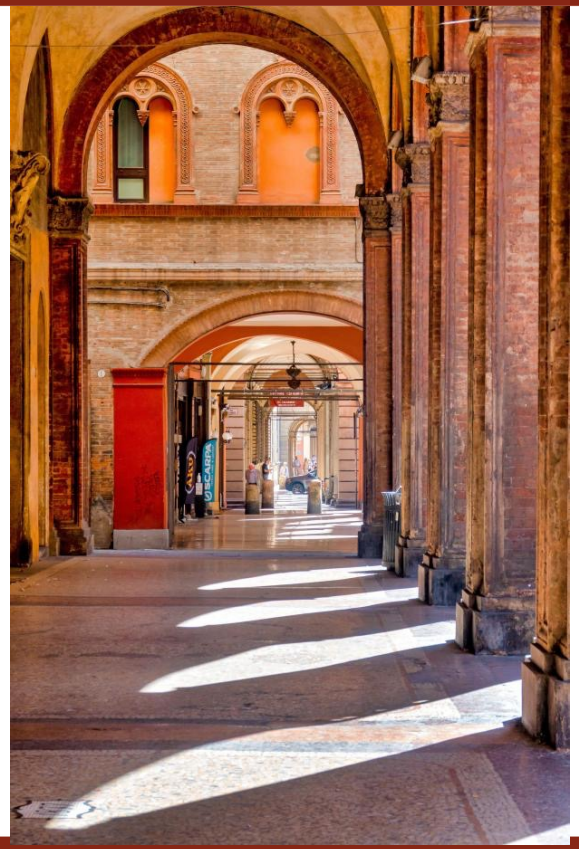


Table 1. Consensus clinical target volume for adjuvant (postoperative) radiotherapy for cervical and endometrial cancer

Target site	Definition
Common iliac lymph nodes	From 7 mm below L4–L5 interspace to level of bifurcation of common iliac arteries into external and internal iliac arteries
External iliac lymph nodes	From level of bifurcation of common iliac artery into external artery to level of superior aspect of femoral head where it becomes femoral artery
Internal iliac lymph nodes	From level of bifurcation of common iliac artery into internal artery, along its branches (obturator, hypogastric) terminating in paravaginal tissues at level of vaginal cuff
Upper vagina	Vaginal cuff and 3 cm of vagina inferior to cuff
Parametrial/paravaginal tissue	From vaginal cuff to medial edge of internal obturator muscle/ischial ramus on each side
Presacral lymph nodes*	Lymph node region anterior to S1and S2 region

* If patient has cervical cancer or endometrial cancer with cervical stromal invasion.

Int. J. Radiation Oncology Biol. Phys., Vol. 71, No. 2, pp. 428–434, 2008

NRG Oncology/RTOG Consensus Guidelines for Delineation of Clinical Target Volume for Intensity Modulated Pelvic Radiation Therapy in Postoperative Treatment of Endometrial and Cervical Cancer: An Update

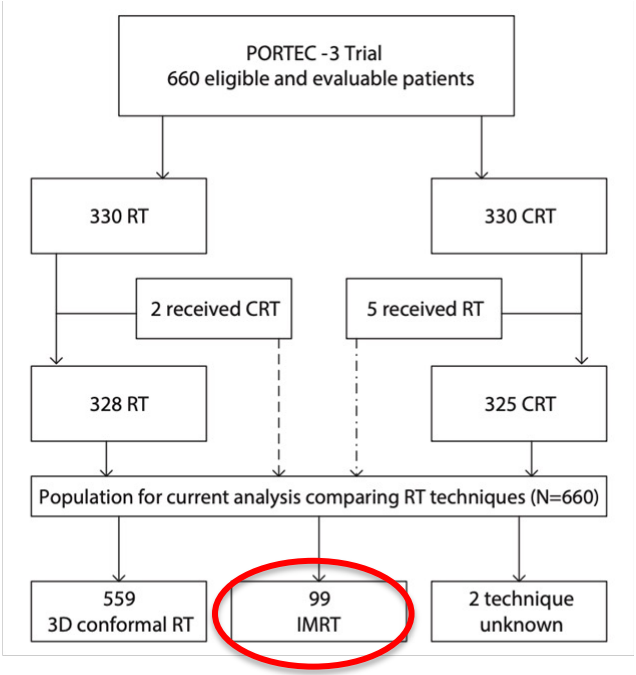
Purpose: Accurate target definition is critical for the appropriate application of radiation therapy. In 2008, the Radiation Therapy Oncology Group (RTOG) published an international collaborative atlas to define the clinical target volume (CTV) for intensity modulated pelvic radiation therapy in the postoperative treatment of endometrial and cervical cancer. The current project is an updated consensus of CTV definitions, with removal of all references to bony landmarks and inclusion of the para-aortic and inferior obturator nodal regions.

Methods and Materials: An international consensus guideline working group discussed modifications of the current atlas and areas of controversy. A document was prepared to assist in contouring definitions. A sample case abdominopelvic computed tomographic image was made available, on which experts contoured targets. Targets were analyzed for consistency of delineation using an expectation-maximization algorithm for simultaneous truth and performance level estimation with kappa statistics as a measure of agreement between observers.

Small W, et al. Int J Radiation Oncol Biol Phys 2021, 109:413e424

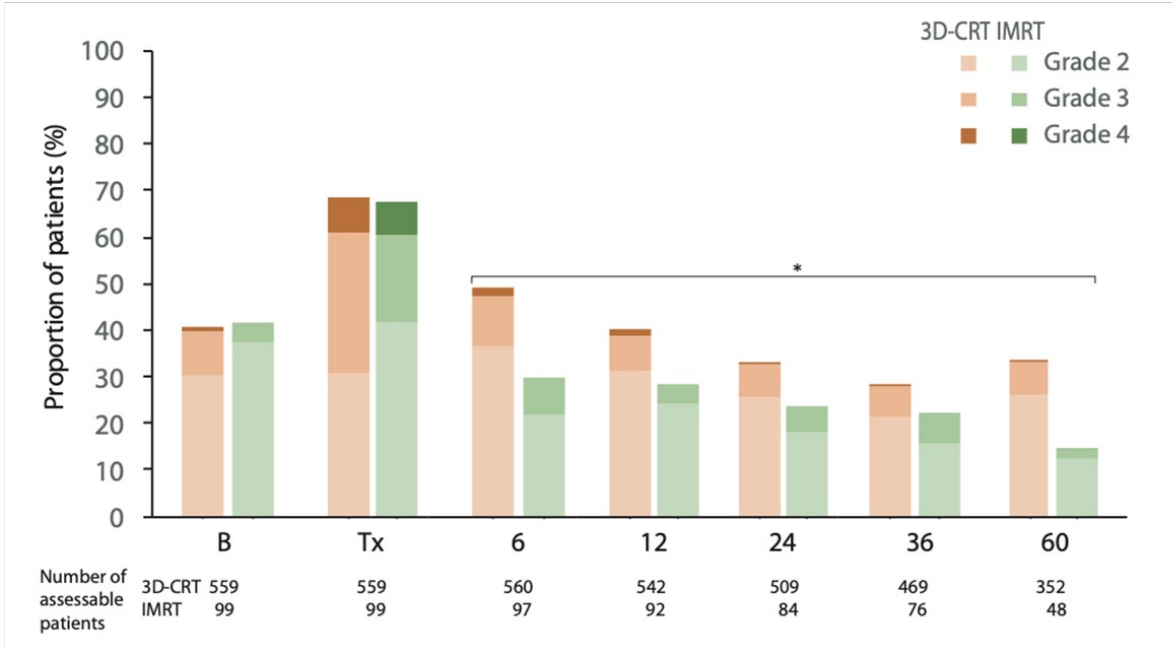
Radiation Therapy Techniques and Treatment-Related Toxicity in the PORTEC-3 Trial: Comparison of 3-Dimensional Conformal Radiation Therapy Versus Intensity-Modulated Radiation Therapy

Bastiaan G. Wortman, MD,* Cathalijne C.B. Post, MD,* Melanie E. Powell, MD, PhD,† Pearly Khaw, MD, PhD,‡ Anthony Fyles, MD, PhD,§ Romerai D'Amico, MD, PhD,‖ Christine Haie-Meder, MD, PhD,¶ Ina M. Jürgenliemk-Schulz, MD, PhD,# Mary McCormack, MD, PhD,** Viet Do, MD, PhD,†† Dionyssios Katsaros, MD, PhD,‡‡ Paul Bessette, MD, PhD,§§ Marie Hélène Baron, MD, PhD,‖‖ Remi A. Nout, MD, PhD,* Karen Whitmarsh, MD, PhD,¶¶ Linda Mileshkin, MD, PhD,## Ludy C.H.W. Lutgens, MD, PhD,*** Henry C. Kitchener, MD, PhD,††† Susan Brooks, MD, PhD,‡‡‡ Hans W. Nijman, MD, PhD,§§§ Eleftheria Astreinidou, PhD,* Hein Putter, PhD,‖‖‖ Carien L. Creutzberg, MD, PhD,* and Stephanie M. de Boer, MD, PhD*



Int J Radiation Oncol Biol Phys, Vol. 112, No. 2, pp. 390–399, 2022

Comparing IMRT vs 3DCRT in high-risk Endometrial Cancer



B – baseline
Tx – during treatment
time in months

Wortman et al. Int J Radiation Oncol Biol Phys 2022;112:390–399

Intensity-Modulated Radiation Therapy Reduces Patient-Reported Chronic Toxicity Compared With Conventional Pelvic Radiation Therapy: Updated Results of a Phase III Trial

Anamaria R. Yeung, MD[1]; Snehal Deshmukh, MS[2]; Ann H. Klopp, MD, PhD[3]; Karen M. Gil, PhD[4]; Lari Wenzel, PhD[5]; Shannon N. Westin, MD, MPH[3]; Andre A. Konski, MD, MBA, MA[6]; David K. Gaffney, MD[7]; William Small Jr, MD[8]; J. Spencer Thompson, MD[9]; Desiree E. Doncals, MD[4]; Guilherme H.C. Cantuaria, MD[10]; David P. D'Souza, MD[11]; Amy Chang, MD[12]; Vijayananda Kundapur, MD[13]; Dasarahally S. Mohan, MD[14]; Michael L. Haas, MD[15]; Yong Bae Kim, MD[16]; Catherine L. Ferguson, MD[17]; Stephanie L. Pugh, PhD[2]; Lisa A. Kachnic, MD[18]; and Deborah W. Bruner, PhD[19]

NRG Oncology's RTOG 1203 trial was a phase III multicenter randomized controlled trial. Patients with cervical or endometrial cancer with indications for postoperative pelvic RT were randomly assigned 1:1 to either CRT or IMRT (149/130). The primary end point was acute GI toxicity at week 5 of RT measured with the bowel domain of the EPIC PRO instrument. Secondary end points included disease outcomes and chronic toxicity.

Yeung AR et al. J Clin Oncol 2022, 40:3115-3119

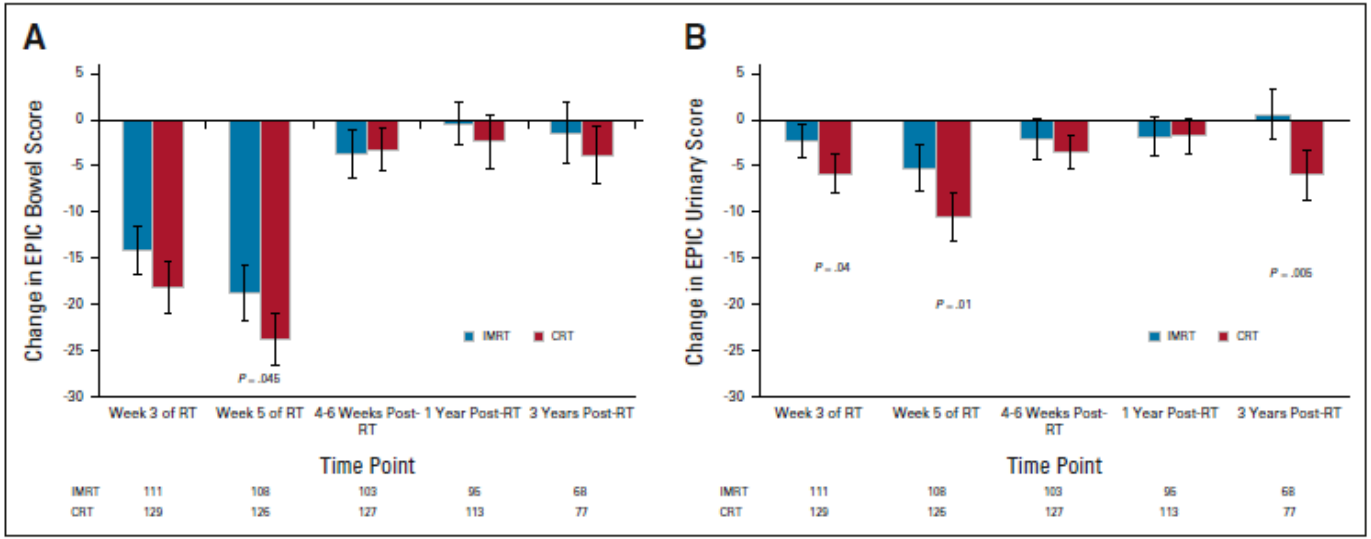


FIG 1. EPIC assessment of GI toxicity depicting changes in EPIC (A) bowel and (B) urinary summary scores between baseline and subsequent time points. Greater negative numbers reflect an increase in worsening of symptoms from baseline. Error bars represent 95% CIs. *P* values not listed are > .05. CRT, conventional radiation therapy; EPIC, Expanded Prostate Cancer Index Composite; IMRT, intensity-modulated radiation therapy; RT, radiation therapy.

Yeung AR et al. J Clin Oncol 2022, 40:3115-3119

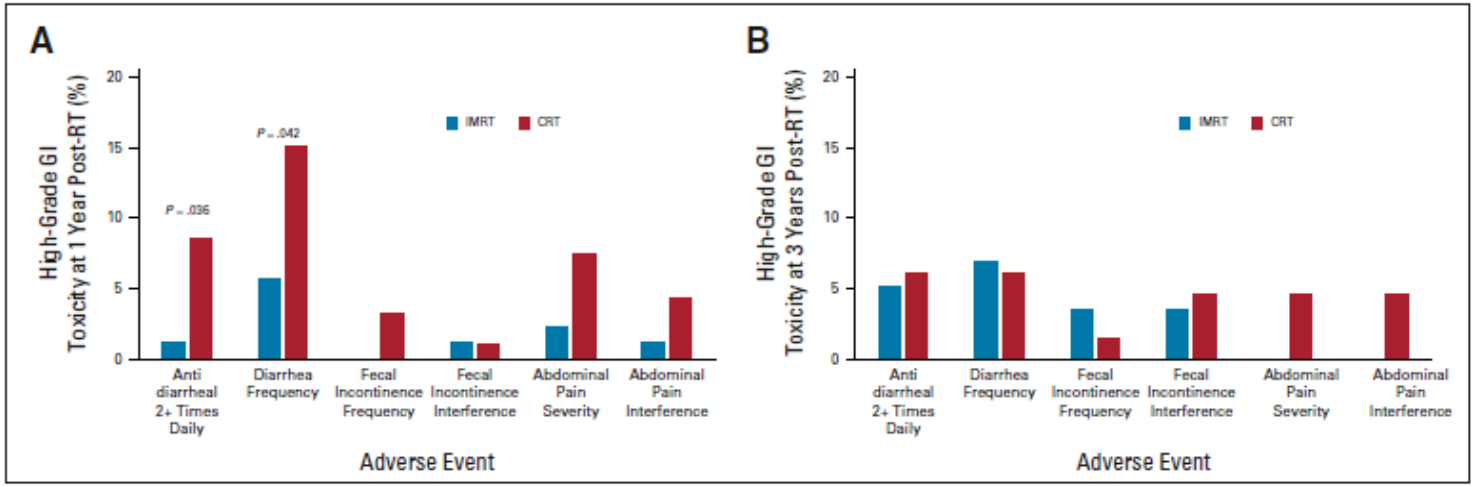


FIG 2. PRO-CTCAE assessment of high-grade (score 3+) GI toxicity at (A) 1 year and (B) 3 years after RT. A PRO-CTCAE score of 3 or 4 represents an adverse event frequency of frequently or almost constantly, severity of severe or very severe, or interference with usual or daily activities of quite a bit or very much. *P* values not listed are > .05. CRT, conventional radiation therapy; IMRT, intensity-modulated radiation therapy; PRO-CTCAE, Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events; RT, radiation therapy.

Yeung AR et al. J Clin Oncol 2022, 40:3115-3119

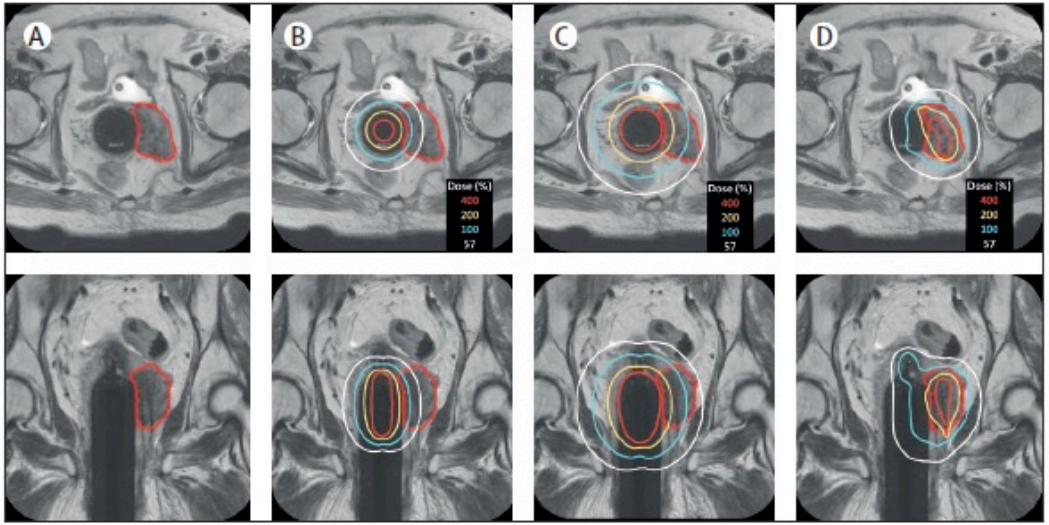


Figure 2: **Different brachytherapy techniques in a patient with advanced stage vaginal cancer**
A transversal and coronal T2-weighted MRI of the anatomy and target volume. (A) Target volume is delineated in red. (B) The use of intracavitary brachytherapy alone in a standard intracavitary plan with dose prescription to 5 mm tissue depth results in underdosage of the target (target volume [red] is not covered by 100% of the prescribed dose [blue]). (C) The use of intracavitary brachytherapy alone in a suboptimal intracavitary plan has an improved, yet still not optimal, coverage of the target and the dose to the vaginal mucosa is too high (200–400% of prescribed dose). (D) The use of an optimal combined intracavitary and interstitial plan has good coverage of the target and good sparing of the organs at risk.

d adaptive

evic, Umesh M Mahantshetty, Remi A Nout

dations on its optimal management
ny aspects, treatment strategies are
rgan-sparing treatment of choice is
herapy, combined with concurrent
its steep dose gradient enables the
sparing the surrounding organs at
herapy in cervical cancer has led to
based on x-ray radiographs. MRI-
s also been adopted sporadically for
l to be the state-of-the-art treatment

Lancet Oncol 2020; 21: e157–67

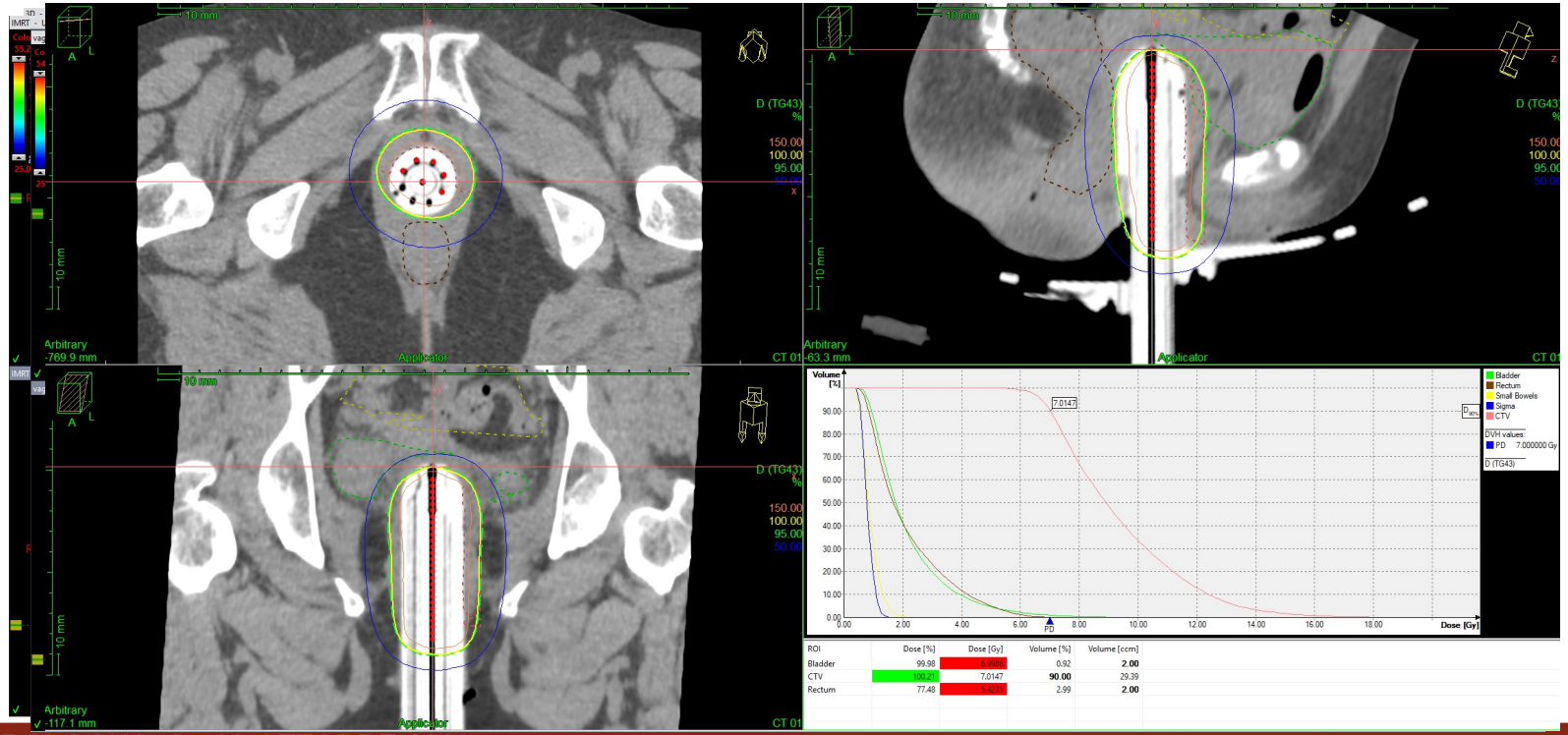
In 2005, the GYN GEC-ESTRO group introduced the concept of image-guided adaptive brachytherapy for locally advanced cervical cancer.
Conceptually, image-guided adaptive brachytherapy defines target volumes according to their presumed density of cancer cells and accounts for the tumour regression observed in repeated 3D imaging during radiotherapy.
During brachytherapy, dose distribution is shaped according to these individual target volumes (ICRU 89, 2013).

In short, these volumes consist of :

- the residual gross primary tumour volume (GTV-T_{res}),
- the high-risk clinical target volume (CTV-T_{HR}), which is the volume at the highest risk of harbouring residual disease and disease recurrence,
- the intermediate-risk clinical target volume (CTV-T_{IR}), which is the volume with an intermediate risk corresponding to the extent of gross tumour at diagnosis.

Westerveld et al. Lancet Oncol 2020; 21: e157–67

3DCRT vs. IMRT vs. VMAT



Radiotherapy Technique

- Image-guided radiotherapy is recommended for IMRT to ensure safe dose application in the tumour-related targets, to account for motion uncertainties, to reduce margins, and to achieve reduced doses to organs at risk.
- Overall treatment time for EBRT should not exceed 5 to 6 weeks.
- IGABT is recommended, preferably using MRI at the time of brachytherapy.
- Combined intravaginal/interstitial applicators should be considered for residual tumours with > 7 mm thickness or for residual tumours with paravaginal disease in order to achieve a sufficiently high radiation dose in the whole CTV-T_{HR}.

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Definitive 3D conformal EBRT or chemoradiotherapy and radiography-based brachytherapy

- Three-dimensional conformal radiotherapy alone or as definitive concomitant chemoradiotherapy (platinum based) and 2D radiography - based brachytherapy is recommended, if IMRT and/or IGABT are not available.

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Update on:

- Dose constraints

QUANTITATIVE ANALYSES OF NORMAL TISSUE EFFECTS IN THE CLINIC (QUANTEC): AN INTRODUCTION TO THE SCIENTIFIC ISSUES

SØREN M. BENTZEN, PH.D., D.SC.,* LOUIS S. CONSTINE, M.D.,† JOSEPH O. DEASY, PH.D.,‡ AVI EISBRUCH, M.D.,§ ANDREW JACKSON, PH.D.,‖ LAWRENCE B. MARKS, M.D.,¶ RANDALL K. TEN HAKEN, PH.D.,§ AND ELLEN D. YORKE, PH.D.‖

From the *Departments of Human Oncology, Medical Physics, Biostatistics and Medical Informatics, University of Wisconsin School of Medicine and Public Health, Madison, WI; †Department of Radiation Oncology, University of Rochester Medical Center, Rochester, NY; ‡Department of Radiation Oncology, Washington University, St. Louis, MO; §Department of Radiation Oncology, University of Michigan, Ann Arbor, MI; ‖Department of Medical Physics, Memorial Sloan Kettering Cancer Center, New York, NY; ¶Department of Radiation Oncology, University of North Carolina at Chapel Hill, NC

Advances in dose–volume/outcome (or normal tissue complication probability, NTCP) modeling since the seminal Emami paper from 1991 are reviewed. There has been some progress with an increasing number of studies on large patient samples with three-dimensional dosimetry. Nevertheless, NTCP models are not ideal. Issues related to the grading of side effects, selection of appropriate statistical methods, testing of internal and external model validity, and quantification of predictive power and statistical uncertainty, all limit the usefulness of much of the published literature. Synthesis (meta-analysis) of data from multiple studies is often impossible because of suboptimal primary analysis, insufficient reporting and variations in the models and predictors analyzed. Clinical limitations to the current knowledge base include the need for more data on the effect of patient-related cofactors, interactions between dose distribution and cytotoxic or molecular targeted agents, and the effect of dose fractions and overall treatment time in relation to nonuniform dose distributions. Research priorities for the next 5–10 years are proposed.

Int. J. Radiation Oncology Biol. Phys., Vol. 76, No. 3, Supplement, pp. S3–S9, 2010

QUANTEC: ORGAN-SPECIFIC PAPER **Pelvis: Bladder**

RADIATION DOSE–VOLUME EFFECTS OF THE URINARY BLADDER

Clinicians might consider the dose limits listed in the conventional fractionation arm of the Radiation Therapy Oncology Group (RTOG) 0415 study of prostate cancer, which included a solid bladder constraint of:

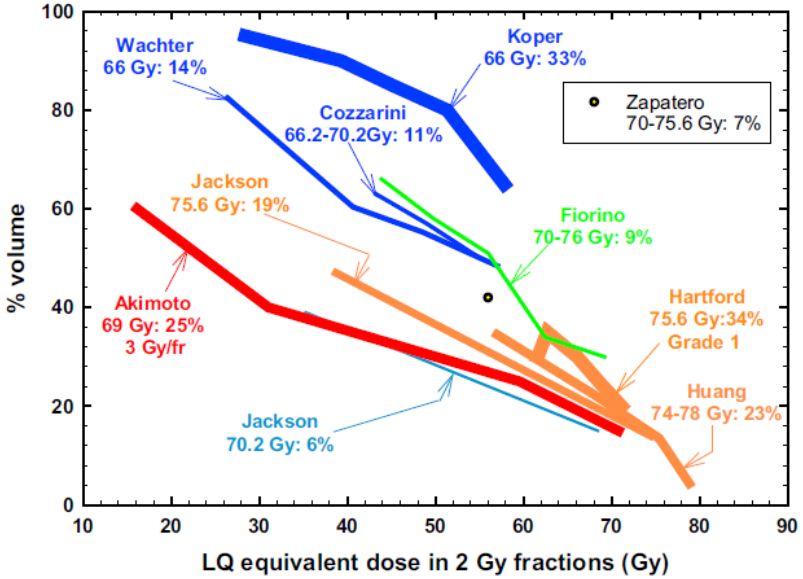
- no more than 15% of the volume to receive a dose >80 Gy,
- no more than 25% of the volume to receive a dose >75 Gy,
- no more than 35% of the volume to receive a dose >70 Gy,
- and no more than 50% of the volume to receive a dose >65 Gy.

Int. J. Radiation Oncology Biol. Phys., Vol. 76, No. 3, Supplement, pp. S116–S122, 2010

QUANTEC

ELSEVIER

Dose-volume limits for >= grade 2 rectal toxicity with LQ corrected doses (α/β = 3 Gy)



p. S123–S129, 2010

10/$–see front matter

QUANTEC: ORC **lvis: Rectum**

RADIATIC **NJURY**

JEFF M. MICI R, PH.D.,‡

*Department of cal Physics,
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Systematic review

Radiotherapy and Oncology 93 (2009) 153–167

Dose–volume effects for normal tissues in external radiotherapy: Pelvis

Claudio Fiorino [a,*], Riccardo Valdagni [b], Tiziana Rancati [b], Giuseppe Sanguineti [c]

Organ: Rectum; End-point: Late bleeding (only) and consistent definition of rectum length [33]				
Ref.	No. of pts	Doses	Suggested constraints	Comments
Jackson [6]	171	70.2 or 75.6 Gy	RTOG Grade ⩾ 2: V40Gy < 60% V77Gy < 14% (for patients treated at 75.6 Gy)	
Fiorino [7]	229	70–76 Gy	Modified RTOG Grade ⩾ 2:	Including non-conformal patients; excluded pts

Organ: Rectum; End-point: Late "Rectal toxicity" (including bleeding)				
Storey [22]	189	70 or 78 Gy	GI RTOG Grade ⩾ 2: V70Gy < 25%	Different definitions of rectum[a]
Huang [23]	163	70 or 78 Gy	GI RTOG Grade ⩾ 2: V60Gy < 40% V70Gy < 25% V75.6Gy < 15% V78Gy < 5%	Different definitions of rectum[a]
Michalski [64]	256	74 Gy	GI RTOG Grade ⩾ 2: V65Gy < 50%	
Fonteyne [47]	241	74–80 Gy	Rectal toxicity questionnaire-based scale Grade ⩾ 2: V40Gy < 84% V50Gy < 68% V60Gy < 59% V65Gy < 48%	All patients were treated with IMRT technique; different definitions of rectum[b]
Karlsdottir [63]	247	70 Gy	GI RTOG Grade ⩾ 2: V40Gy < 70%	A number of cut-offs predictive of toxicity; V40–V43 most predictive
Kuban [62]	301	70 or 78 Gy	GI RTOG Grade ⩾ 2: V70Gy < 25%	Different definitions of rectum[a]

Predictors of Rectal Tolerance Observed in a Dose-Escalated Phase 1-2 Trial of Stereotactic Body Radiation Therapy for Prostate Cancer

D. W. Nathan Kim, MD, PhD,* L. Chinsoo Cho, MD,† Christopher Straka, BS,* Alana Christie, MS,‡ Yair Lotan, MD,§ David Pistenmaa, MD,* Brian D. Kavanagh, MD,‖ Akash Nanda, MD, PhD,¶ Patrick Kueplian, MD,# Jeffrey Brindle, MD,** Susan Cooley, RN,* Alida Perkins, ANP,* David Raben, MD,‖ Xian-Jin Xie, PhD,‡ and Robert D. Timmerman, MD*

Int J Radiation Oncol Biol Phys, Vol. 89, No. 3, pp. 509–517, 2014

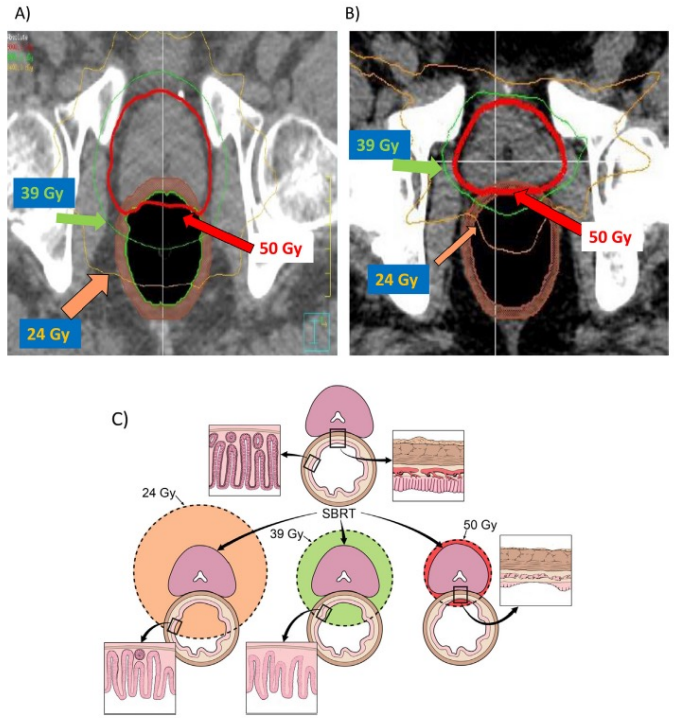
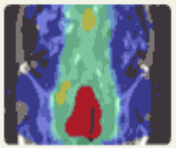


Fig. 2. Representative treatment plans of patients treated to 50 Gy in 5 fractions, with (A) grade 2 acute and grade 3 delayed rectal toxicity, and (B) grade 1 acute/delayed rectal toxicity only. (C) Representation of biologic consequence of rectal wall irradiated to 24 Gy, 39 Gy, and 50 Gy.



EMBRACE

{ Image guided intensity modulated External beam radiochemotherapy and MRI based adaptive BRAchytherapy in locally advanced CErvical cancer }

The GEC ESTRO gyn network has designed and initiated the EMBRACE studies which develop, perform and evaluate image guided radiotherapy in cervix cancer with a special focus on improving clinical outcome. The original focus of EMBRACE studies was MRI based adaptive brachytherapy (EMBRACE I). The scope was then widened to include also image guided radiotherapy and systemic treatment, at present in the form of concomitant radiochemotherapy (EMBRACE II). The EMBRACE study office was located within the department of radiotherapy, Comprehensive Cancer Center, Vienna General Hospital, Vienna Medical University

Radiotherapy and Oncology 158 (2021) 300–308

Contents lists available at ScienceDirect

Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com

Original Article

Importance of the ICRU bladder point dose on incidence and persistence of urinary frequency and incontinence in locally advanced cervical cancer: An EMBRACE analysis

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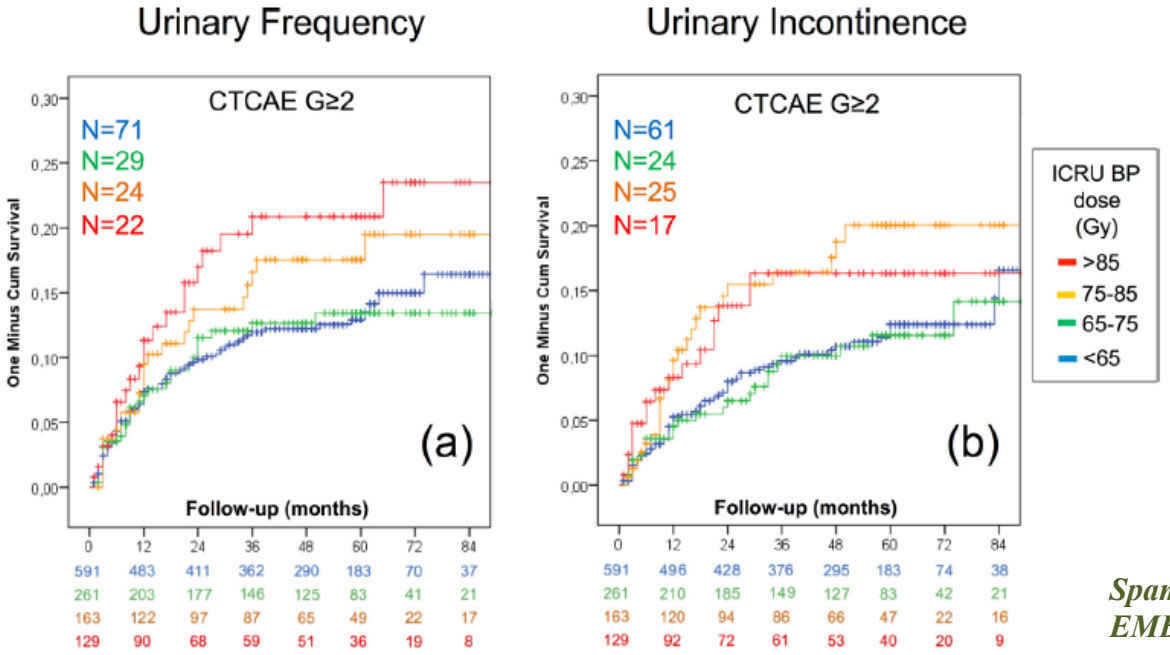
Risk factors for urinary frequency and incontinence in locally advanced cervical cancer

Radiotherapy and Oncology 158 (2021) 300–308



Spampinato et al. 2021
EMBRACE analysis

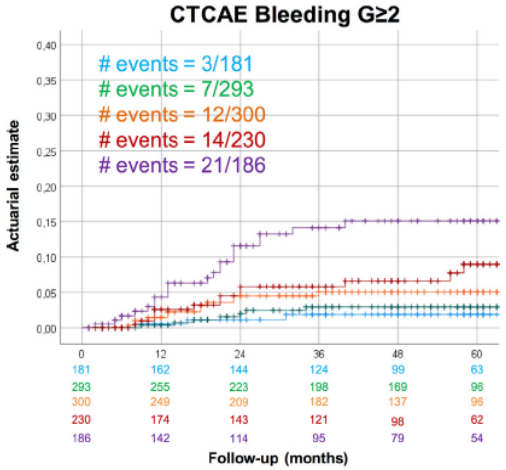
CLINICAL INVESTIGATION

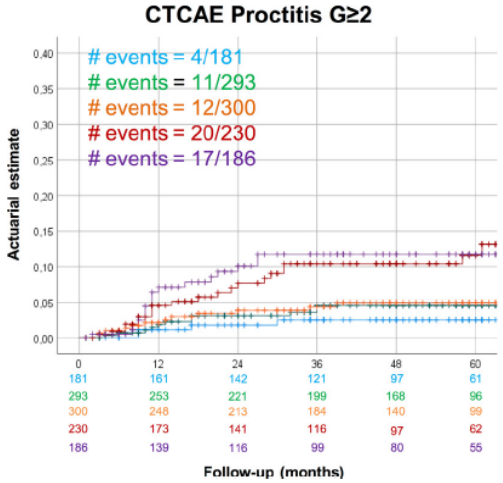
Severity and Persistency of Late Gastrointestinal Morbidity in Locally Advanced Cervical Cancer: Lessons Learned From EMBRACE-I and Implications for the Future

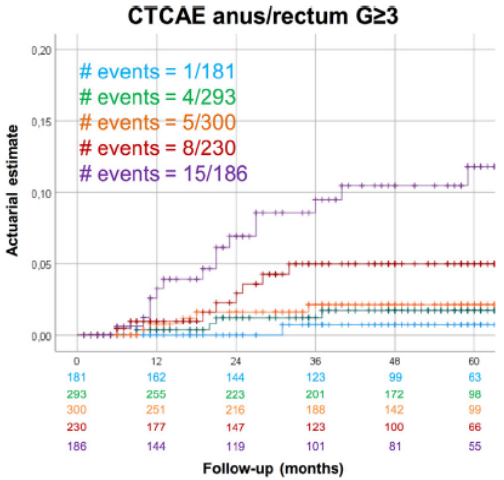
Sofia Spampinato, PhD,* Nina B.K. Jensen, MD, PhD,* Richard Pötter, MD,† Lars U. Fokdal, MD, PhD,* Cyrus Chargari, MD, PhD,‡ Jacob C. Lindegaard, MD, DMSc,* Maximilian P. Schmid, MD,† Alina Sturdza, MD,† Ina M. Jürgenliemk-Schulz, MD, PhD,§ Umesh Mahantshetty, DMRT, MD, DNB,‖ Peter Hoskin, MD, FRCR,# Barbara Segedin, MD, PhD,** Bhavana Rai, MD, DNB,†† Kjersti Bruheim, MD, PhD,‡‡ Ericka Wiebe, MD, MSc,§§ Elzbieta Van der Steen-Banasik, MD,‖‖ Rachel Cooper, MD, FRCR,## Erik Van Limbergen, MD, PhD,*** Marit Sundset, MD,††† Bradley R. Pieters, MD, PhD,‡‡‡ Ludy C.H.W. Lutgens, MD, PhD,§§§ Li Tee Tan, MD,‖‖‖ Elena Villafranca, MD,### Stéphanie Smet, MD,**** Noha Jastaniyah, MD,†††† Remi A. Nout, MD, PhD,‡‡‡‡ Christian Kirisits, DSc,† Supriya Chopra, MD,§§§§ Kathrin Kirchheiner, MSc, PhD,† Kari Tanderup, PhD,* and EMBRACE Collaborative Group,‖‖‖‖

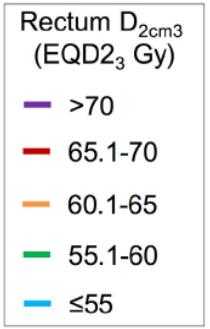
Int J Radiation Oncol Biol Phys, Vol. 112, pp. 681–693, 2022

Gastrointestinal Morbidity (EMBRACE-I)









Spampinato et al. Int J Radiation Oncol Biol Phys 2022:112, 681–693

Update on:

- Support Therapies

ELSEVIER
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BRACHYTHERAPY
Brachytherapy 22 (2023) 30–46

Brachytherapy impacts on sexual function: An integrative review of the literature focusing on cervical cancer

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Interventions to prevent and address sexual dysfunction

Interventions	Details
Routine Sexual Health Screening	**PROMIS Single-item Screener** (61) In the past 12 months, has there ever been a period of 3 months or more when you had any of the after problems or concerns? Check all that apply. You wanted to feel more interest in sexual activity Your vagina felt too dry You had pain during or after sexual activity You had difficulty having an orgasm You felt anxious about sexual activity You did not enjoy sexual activity Some other sexual problem or concern No sexual problems or concern **NCCN Brief Sexual Symptom Checklist for Women** (62) 1. Are you satisfied with your sexual function? Yes or no 2. How long have you been dissatisfied with your sexual function? 3. The problem with your sexual function is (mark one or more): -Problem with little or no interest in sex -Problem with decreased genital sensation (feeling) -Problem with decreased vagina lubrication (dryness) -Problem reaching orgasm -Problem with pain during sex -Other: 4.Which problem is the most bothersome? 5. Would you like to talk about it with your doctor?

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Interventions to prevent and address sexual dysfunction

VDT and lubricants	Education and counseling on the rationale/importance of VDT should be offered to all women and may occur even before initiation of RT. Consider initiation of VDT use within 6 weeks of RT completion with a frequency of 3 times per week for 5–10 min per session, and for a duration of greater than 12 months after RT completion. (20,67,69–74,76). A water-soluble lubricant should be placed on the dilator as well as at the opening of the vagina before insertion. Patients may be advised to perform additional pelvic floor exercises during insertion. Review the need for VDT on a regular basis in follow up, consider discontinuing if no longer required that is, when experiencing no discomfort during vaginal examinations
Vaginal/vulvar moisturizers	Introduce the use of vaginal/vulvar moisturizers for patients with signs of estrogen-deprivation symptoms (dryness, atrophy) such as nonhormonal hyaluronic acid products. May ideally be used three to five times a week in cancer survivors with greater efficacy (78). Products with vitamin E may also help to reduce the acute effects of treatment during and after RT completion (79)
Hormone replacement therapy and local estrogen therapy	Local estrogen therapy in the form of creams or inserts may help to further accelerate the recovery of the vaginal epithelium and should be considered in patients who have persistent vaginal/vulvar symptoms despite nonhormonal strategies (82,83) HRT is safe and should be offered to young cervical cancer patients with treatment-induced menopause. Cervical cancer is not hormonally responsive and overall HRT is underutilized in this population. Combination estrogen/progestogen therapy should be used to reduce the risk of secondary endometrial hyperplasia (80–82)
Other	Pelvic floor physical therapy can help to increase flexibility and improve blood circulation in paravaginal tissues. Women with improved pelvic floor strength have been shown to exhibit better sexual function, especially in arousal and orgasm domains (87,88) Psychoeducational interventions in the form of structured counseling, education, coping and psychological support etc. can help reduce patient distress and psychosocial morbidity to help foster a better quality of life during and after treatment (99,100)

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Advances in the management of radiation-induced cystitis in patients with pelvic malignancies

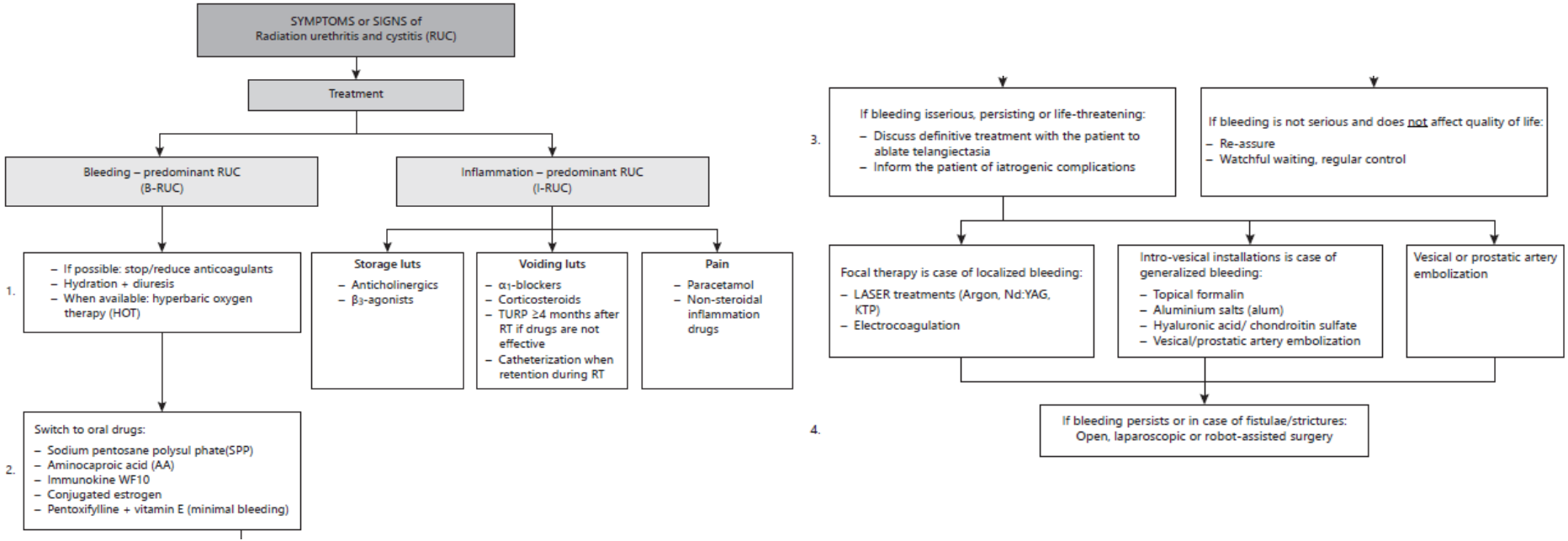
Treatment options involve:

- symptomatic treatment: phenazopyridine, flavoxate
- Intravesical therapy: bladder irrigation, hyperbaric oxygen therapy (HBOT), electrocoagulation,
- vascular interventional therapy, surgery,

Prevention includes filling up the bladder to remove it from the radiation field and delivering radiation based on helical tomotherapy and CT-guided 3D intracavitary brachytherapy techniques.

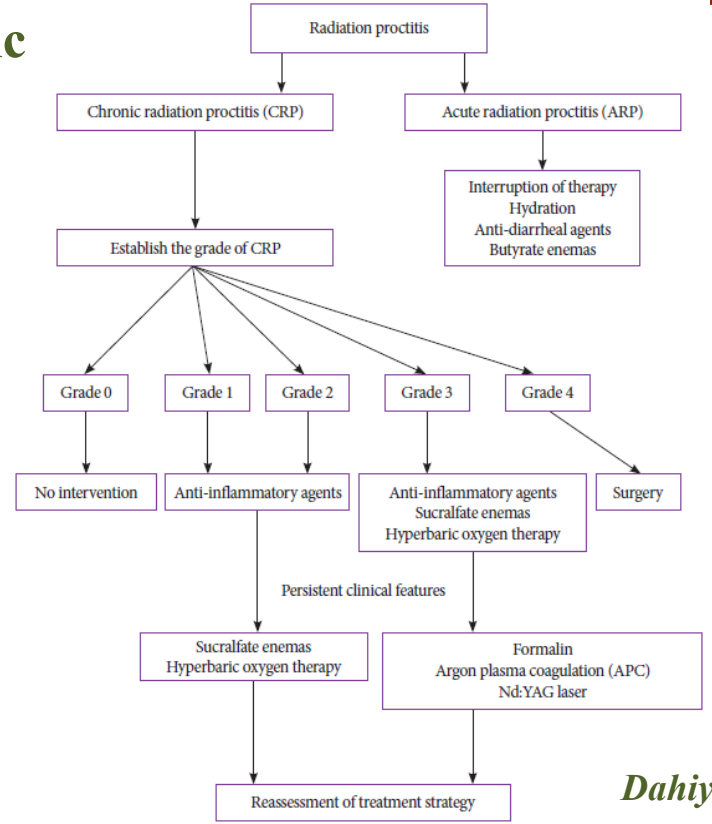
Wang et al. Int J Radiat Biol 2023, 99, 1307–1319

ALGORITHM FOR MANAGEMENT OF RUC



Vanneste et al. Urol Int 2022;106:63–74

Management of Chronic Radiation Proctitis



Dahiya et al. Clin Endosc 2022;55:22-32

CONCLUSIONS

- Definitive radiotherapy with concurrent chemotherapy is the primary organ-sparing treatment of choice for most patients with primary vaginal cancer.

- As radiation therapy advances with IMRT and VMAT, and image guidance in both external beam and brachytherapy, the outcome in both local control and overall survival is improving, and toxicities are decreasing.

- Patient-reported outcomes (PROMs) are useful in defining symptom severity but also the burden of illness for cancer patients. PROMs are increasingly being seen as a way to improve practice by enhancing communication, improving symptom management as well as identifying patient care needs.

AIRO2023

Radioterapia Oncologica:
l'evoluzione al servizio dei pazienti