Title

MP47-07 EJACULATORY FUNCTION AFTER RADIOTHERAPY FOR PROSTATE CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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MP47-05
A NOVEL MACHINE LEARNING-BASED RISK CLASSIFICATION FOR VASCULAR DAMAGE IN MEN WITH ERECTILE DYSFUNCTION

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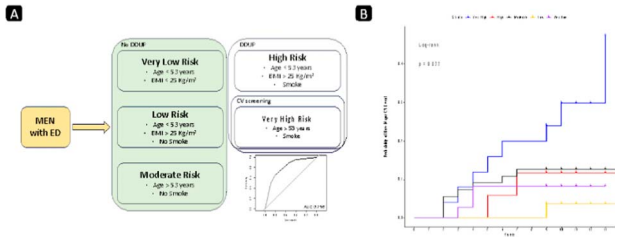
INTRODUCTION AND OBJECTIVE: Diagnostic role of penile dynamic colour Doppler duplex ultrasound (CDDU) erectile dysfunction (ED) is still debated. However, vasculogenic ED is considerably associated with the risk of new cardiovascular (CV) events. We aimed to develop a new vascular risk classification based on a cohort of patients diagnosed with ED.

METHODS: CDDU data from 301 consecutive ED patients were prospectively collected at a single academic center. Baseline data included: age, known cardiovascular risk factors, BMI, smoking and alcohol habits. All patients completed the International Index of Erectile Function – erectile function (IIEF-EF) domain scores. V-ED was defined as a peak systolic velocity <35 cm/s and a resistance index <0.8. We relied on Chi-square Automatic Interaction Detectors (CHAID), a recursive machine learning partitioning algorithm to identify risk groups for V-ED. ROC curve was applied to test the accuracy of the prediction for the risk classification. Using retrospectively collected data from a second cohort of 127 men diagnosed and treated for ED, the risk groups were tested as predictors of response to ED treatment and the onset of new major CV events using logistic, cox regression models and Kaplan Meier curves.

RESULTS: Median (IQR) age was 45 (30-58) years and BMI was 24.5 (22.5-26.8) kg/m^2. Of all, 27% (n=81) were active smokers. At CDDU, V-ED was detected in 107 (36%) patients. The CHAID identified five groups: i) age <53 years and BMI <25 kg/m^2; ii) age <53 years, BMI >25 kg/m^2 and non-smoker; iii) age ≥ 53 years and non-smoker; iv) age <53 years, BMI >25 kg/m^2 and smoker; v) age >53 years and smoker. We named those groups as very low-, low-, moderate-, high-risk and very high-risk for V-ED (Figure 1A). Using the second cohort of patients, high-risk (OR: 4.29; 1.46-13.53; p=0.030) and very high-risk groups (OR: 5.55; 2.16-15.85; p=0.004) emerged to be associated with ED treatment response, whilst very high-risk group (HR: 4.00; 1.06-15.08; p=0.041) resulted predictor of new CV events (Figure 1B).

CONCLUSIONS: We identified five risk classes for vascular damage in ED patients. "Very High Risk" and "High Risk" patients should be considered as ideal candidates for CDDU, being at a major risk of V-ED with poor respond to ED therapy. Additionally, "Very High Risk" patients are at 30% risk of developing CVD within ten years.

Figure 1



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MP47-06
REVIEWING THE CANADIAN LANDSCAPE OF RESTORATIVE THERAPIES FOR ERECTILE DYSFUNCTION

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INTRODUCTION AND OBJECTIVE: Erectile dysfunction (ED) is the inability to achieve or maintain an erection that is sufficient for sexual performance. Restorative therapies (RT(s)) such as shockwave therapy (Li-SWT) and platelet rich plasma (PRP) shots are heralded as options to restore one's natural, spontaneous erection without the need for pharmacologic therapy. However, limited data exists to support their routine clinical use. With direct-to-consumer marketing, numerous clinics across Canada now offer this therapy. We sought to investigate the landscape of RTs for ED across Canada.

METHODS: Searches were made online to browse for clinics which were offering Li-SWT and PRP as a RT for ED. Clinics advertising their services online had their public website analysed for preliminary data collection. These clinics were then contacted to capture data on treatment cost, protocol, clinic ownership, training of providers, reported success rates, and administration of adjuvant therapies. Data obtained was then compared against existing literature to assess the accuracy of marketing towards patients.

RESULTS: 107 clinics were found offering either Li-SWT or PRP as a restorative therapy, of these, 12 clinics were eliminated without further analysis. To date, data has been obtained for 95 clinics which provided a form of RT. We were able to obtain responses from 68 of these clinics. 53 clinics provided Li-SWT, and 36 clinics provided PRP, 21 clinics provided both forms of treatment. Out of these clinics, 40 clinics provided transparent cost and treatment protocols for Li-SWT, and 30 clinics provided data for PRP. The average cost of 6 sessions of Li-SWT was $2156.67 CAD ($700 - $4000), and for 1 shot of PRP was $1477.61 CAD ($500 - $3000). 61 clinics provided us with data on their ownership, 39 clinics had a physician on site, 26 of these being family medicine trained. 7 clinics did not report any staff credentials, and 17 were of other healthcare modalities, with 5 being listed simply as 'trained providers'. Only 10 clinics provided success rates resulting in an average of 87.3%, with one clinic quoting a success rate of 100%.

CONCLUSIONS: Our study has so far found that Li-SWT and PRP for RTs are being largely marketed directly-to-consumer with very little urologic intervention prior to treatment throughout Canada, if any at all. The study highlights similar trends found in the USA, taking advantage of the psychosocial burden faced by patients that suffer from ED, tacking on substantial financial costs with marketing practises that are not transparent about the limitations of these RT modalities.

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MP47-07
EJACULATORY FUNCTION AFTER RADIOTHERAPY FOR PROSTATE CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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INTRODUCTION AND OBJECTIVE: Ejaculation profiles in radiated men with prostate cancer have not been summarized in the existing literature. We performed a systematic review and meta-analysis to assess ejaculatory outcomes after radiation therapy (RT) for prostate cancer.

METHODS: Databases including PubMed, Embase and Web of science were systematically queried to identify 18 articles assessing ejaculatory function post-radiation. Primary outcome was anejaculation rate and secondary outcomes included ejaculatory volume (EV), ejaculatory discomfort (ED) and mean decline in ejaculatory function

scores (EFS). Quality assessment was done by Newcastle-Ottawa scale. Pooled proportions were calculated using inverse variance and random effects models for anejaculation rate and ejaculatory volume.

RESULTS: Eighteen observational studies with 2115 patients reporting ejaculatory profiles post-RT were identified. Seven studies utilized external beam RT, 7 brachytherapy, 1 stereotactic RT and 2 utilized either external or brachytherapy in 1. Anejaculation rate was reported by 10 studies. The pooled proportion of anejaculation with random-effects model was 0.18 (95% CI 0.11-0.36). Pooled proportion of patients having decreased ejaculatory volume was 0.85 (95% CI 0.81-0.89). Ejaculatory discomfort was reported in 5 studies ranging from 3% to 15%. Decline in ejaculatory function scores was reported by 5 studies with 4 reaching statistical significance (Table 1).

CONCLUSIONS: Patients undergoing radiation are likely to experience meaningful impact on ejaculation profiles and hence should be counselled on the trajectory of these side-effects.

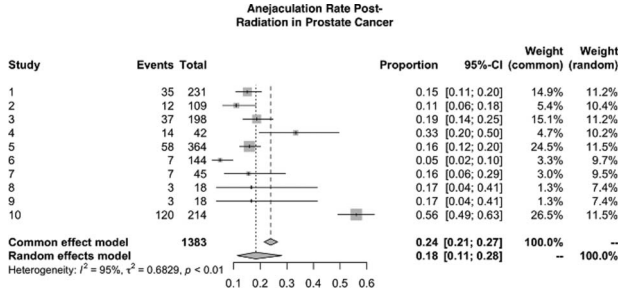

Table 1. Ejaculatory Function Scores

N	Study	Radiation Type	Measure of Ejaculatory Function	Result
1	Sholklapper et. al.	SBRT	Ejaculation Scale (ES-8) from the Male Sexual Health Questionnaire (MSHQ)	Decline in mean score from baseline to one month ($p < .0001$)
2	Choo et. al.	EBRT/BT	Brief Sexual Function Inventory (BSFI)	Decline from 6.6 (95% CI 2.1-49) to 3.6 (95% CI 2.9-45)
3	Sullivan et. al.	EBRT/BT	International Index of Erectile Function (IIEF) ~ Orgasm Domain Score	Decreased over the follow-up period (36 months) 2.8 ($P < 0.01$).
4	Wernicke et. al.	EBRT	Ejaculatory difficulty score (EJS)	Initial decline. Low dose groups improved over time, whereas high-dose groups worsened
5	Siglin et. al.	EBRT	Brief Sexual Function Inventory (BSFI)	After 2–6 years: no statistically significant change

Source of Funding: N/A

MP47-08

IMPACT OF HYPOGONADISM ON RADICAL CYSTECTOMY OUTCOMES

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INTRODUCTION AND OBJECTIVE: Urothelial carcinoma of the bladder (UCB) is among the most lethal urologic malignancies, and radical cystectomy (RC) is associated with significant peri-operative morbidity. Prior literature has suggested that hypogonadism drives maladaptive body composition changes and decreased physiological reserve. However, the relationship between testosterone levels and outcomes following RC have not been thoroughly explored. Herein, we aim to examine the association between testosterone levels and both peri-op and longitudinal oncologic outcomes following RC.

METHODS: Patients who underwent RC for UCB between 1980-2020 were identified using our institutional prospectively maintained clinical registry. Patients were included if they had at least one pre-op serum testosterone level available for review. Patients were defined as hypogonadal if their pre-op serum testosterone level was $\leq$300 ng/dL. Survival analysis using Cox regression was used to explore outcomes of interest.

RESULTS: A total of 99 patients were included, among whom 43 patients were hypogonadal and 56 were eugonadal. Median pre-op serum testosterone was 192.0 (IQR: 43.0 - 284.0) ng/dL and 505.5 (IQR: 385.0 - 569.0) ng/dL in the hypogonadal and eugonadal groups, respectively. At a median follow-up of 4.0 (IQR: 1.0 – 9.7) years, 54 patients died, including 34 who died of urothelial carcinoma. There were no significant between-group differences in patient age ($p=0.2507$), pathologic T-stage ($p=0.4656$), nor use of neoadjuvant chemotherapy ($p=0.16$). Hypogonadal patients were more likely to have received androgen deprivation therapy prior to RC ($p<0.0001$). On Cox survival analyses, patients with pre-op hypogonadism had worse overall survival (HR: 2.33 CI: 1.34 - 3.32, $p=0.0028$) and worse cancer-specific survival (HR: 2.35 CI: 1.17 – 3:53, $p=0.0168$) compared with eugonadal patients. There was no statistically significant difference in metastasis-free survival nor peri-operative surgical outcomes between groups.

CONCLUSIONS: Patients with pre-op hypogonadism experienced worse cancer-specific and overall survival after RC as compared to eugonadal patients. This hypothesis generating study highlights the need for further prospective studies exploring the impact of serum testosterone levels and peri-op testosterone replacement therapy on RC outcomes.

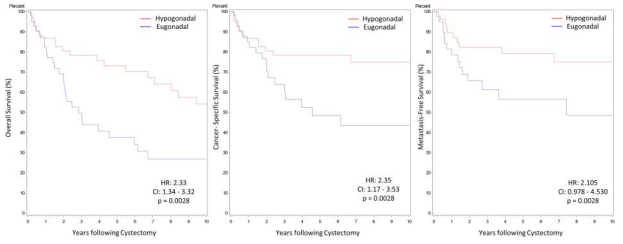

Figure 1. Kaplan-Meier curves demonstrating survival outcomes of hypogonadal and eugonadal patients (A: overall survival, B: cancer-specific survival, C: metastasis-free survival).

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MP47-09

EMERGING DATA REGARDING PREDICTORS OF PATIENT'S RESPONSE TO SPERMATIC CORD BLOCK FOR IDIOPATHIC CHRONIC ORCHIALGIA

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INTRODUCTION AND OBJECTIVE: Approximately 25% to 50% of Chronic Orchialgia is not known to have a specific etiology and is referred to as Idiopathic Chronic Orchialgia (ICO). The evaluation and treatment of this diagnosis can be challenging for physicians given that pathophysiology is not entirely understood. Management algorithms suggest progression to spermatic cord block if conservative management fails. We aimed to better understand the predictive factors of patients who present with ICO and have a response to spermatic cord block (SCB).

METHODS: We conducted a retrospective chart review of all male patients presenting to our men's health urologic clinic with scrotal pain between January 2016-June 2022. 350 patients were reviewed and 88 were determined to qualify as having true ICO without otherwise identifiable cause for their pain. Patients were stratified by having successful or unsuccessful SCB response. They were matched 2 to 1 by age. Chi-Square Test and T-test were run for statistical analysis and a $p<0.05$ was considered statistically significant.

RESULTS: A total of 26 patients who had a SCB were responsive to it and 26 were not, after matching for age. Mean duration of pain in those who responded to SCB was about 7 months longer than