

CaPSURE Predictors for Metastatic Prostate Cancer in Men on ADT

Predictors of Clinical Metastasis in Prostate Cancer Patients Receiving Androgen Deprivation Therapy: Results From CaPSURE.

Abouassaly R, Paciorek A, et al:

Cancer 2009; 115 (October 1): 4470-4476

Younger men diagnosed with high-risk prostate cancer are at particular risk for disease recurrence and progression and should be treated and followed up accordingly.

Objective: To determine the clinical predictors of metastatic disease in contemporary prostate cancer patients on androgen deprivation therapy (ADT).

Methods: The Cancer of the Prostate Strategic Urological Research Endeavor (CaPSURE) registry was queried for men on ADT, which yielded 5201 subjects. Men with metastatic disease at ADT initiation and men diagnosed within 2 years of the study were excluded. Clinical parameters for predicting bone metastasis were assessed.

Results: Median time from primary treatment to metastasis was 53 months. Multivariate analysis indicated that clinical risk group, percent positive biopsy, younger age at diagnosis, and PSA velocity were the significant predictors for metastases.

Conclusions: Younger age at diagnosis, risk category, volume of disease, and PSA velocity were shown to be significant predictors of metastatic disease in patients on ADT from the CaPSURE database.

Reviewer's Comments: The CaPSURE database is a useful resource for gaining knowledge about prostate cancer. The database is a registry of men with biopsy-proven cancer identified from community and academic practices. In this paper by Abouassaly and colleagues, CaPSURE data were used to find clinical parameters predictive of bone metastases in patients on ADT. PSA velocity, PSA doubling time, and PSA nadir have all been shown by others to have predictive power. In this analysis, PSA kinetics were not as obtainable (due to the spotty nature of such data in a registry), but age at diagnosis, tumor volume, and risk category were significant predictors for metastases. Tumor volume (>33% of biopsy cores), which had a hazard ratio (HR) of 3.36 (95% CI, 1.53 to 7.38), and high-risk category (modified D'Amico criteria), which had an HR of 2.57 (95% CI, 1.60 to 4.15) are not surprising findings, but age <65 years, which had an HR of 2.11 (95% CI, 1.36 to 3.28) is interesting. Aggressive cancer in younger men has been demonstrated previously but remains an unclear finding. If true, it may have important implications in the current screening controversy. When all 3 predictive features were present, 5-year metastasis-free survival was 84% compared to 95% for those without the predictive features. This can have direct clinical application, such that patients we are caring for who are on ADT and who have these aggressive features may be properly identified for closer monitoring and clinical trials. (Reviewer-Steven E. Canfield, MD).

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Keywords: Androgen Deprivation, Prostate Cancer, Metastasis

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Prostate Cancer--Baseline Functional Status Important to Determine Treatment

Individualizing Quality-of-Life Outcomes Reporting: How Localized Prostate Cancer Treatments Affect Patients With Different Levels of Baseline Urinary, Bowel, and Sexual Function.

Chen RC, Clark JA, Talcott JA:

J Clin Oncol 2009; 27 (August 20): 3916-3922

Men with better urinary, sexual, or bowel function at baseline may face worse increases in dysfunction in these areas after treatment for prostate cancer than men with worse function at baseline.

Objective: To determine if baseline functional levels can be used to individualize prostate cancer treatment-related quality-of-life outcomes.

Methods: Men with prostate cancer answered questions on urinary, bowel, and sexual function at baseline and at periodic follow-up for up to 36 months. Baseline function was stratified as normal, intermediate, or poor.

Results: Results from 409 men with complete follow-up who underwent either radical prostatectomy (RP), external beam radiotherapy (RT), or brachytherapy (BT) were reported. Different levels of baseline function were associated with distinctive outcomes. In general, better baseline function was associated with worse dysfunction.

Conclusions: Stratifying patients by baseline functional status may allow more tailored discussions regarding outcomes after treatment for patients with localized prostate cancer.

Reviewer's Comments: Health-related quality-of-life assessment is an essential component of the discussion urologists have with their patients who are facing treatment for localized prostate cancer. Much of the discussion often boils down to quality-of-life issues because cure rates are often likely to be equivalent. This study uses baseline functional status to stratify patients before treatment. Rather than averaging all patients who underwent RP, for example, into "before" and "after," the authors stratified these patients with normal, intermediate, or poor functions (such as urinary or sexual) both before and after treatment. This difference can be much more clinically useful. An interesting finding was that patients with the best function at baseline had worse scores afterward than those with worse function at baseline. This is actually quite surprising. Other specific findings were that BT best preserved sexual function in patients with normal baseline function; bowel problems were worse in patients undergoing RT or BT; RP caused worse incontinence than RT or BT; and obstructive urinary function improved with all treatments in patients with worse obstructed baseline function, although RP had the greatest improvement for this symptom. Problems with this study include a large number of patients who were excluded from the analysis and no information on hormone-related effects. It is also curious that few sexual function differences were seen between nerve-sparing and non-nerve-sparing surgery. Ultimately, this study addresses the point that every patient is an individual, and that generalized outcomes cannot always be applied, especially functional outcomes after prostate cancer treatment. It remains critical to engage patients in personalized decisions. (Reviewer-Steven E. Canfield, MD).

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Keywords: Prostate Cancer, Functional Outcomes

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Shock Wave Lithotripsy for Kidney Stones--Less May Be More

A Randomized, Double-Blind Trial to Compare Shock Wave Frequencies of 60 and 120 Shocks per Minute for Upper Ureteral Stones.

Honey RJD'A, Schuler TD, et al:

J Urol 2009; 182 (October): 1418-1423

A shock wave frequency of 60 shocks per minute improves stone-free rates, lowers the number of shocks needed for complete fragmentation, and decreases the need for additional procedures.

Objective: To examine the effect of slower shock wave frequency for shock wave lithotripsy on stones located in the proximal ureter.

Design: Randomized, double-blind trial.

Participants: 163 patients with previously untreated radiopaque calculus in the upper ureter measuring at least 5 mm.

Methods: Patients were randomized to treatment with a rate of 60 or 120 shocks per minute. Stone-free status was checked at 2 weeks and 3 months.

Results: 77 patients were randomized to 60 shocks per minute, and 86 patients were randomized to 120 shocks per minute. Compared to those with the 120-shock rate, those receiving 60 shocks had a higher overall stone-free rate at 3 months (65% vs 49%; $P=0.039$), needed significantly fewer shocks per treatment (2680 vs 2940), and required fewer ancillary procedures (30% vs 45%). However, the mean treatment time for 60 shocks per minute was significantly longer (44.3 vs 24.5 minutes).

Conclusions: Decreasing the rate of shock wave delivery from 120 to 60 shocks per minute improved stone-free rates and reduced the need for ancillary procedures in patients with upper ureteral stones. No difference in morbidity was found. Treatment time was increased but at an acceptable level.

Reviewer's Comments: This study examines the effect of slowing the shock wave frequency rate from 120 to 60 shocks per minute in the treatment of upper ureteral stones. This was a well-designed and executed randomized, double-blind trial. The authors are adding to previous studies they have performed on slowing the shock wave rate for kidney stones. The concept is also based on several in vitro and animal studies, along with recent published meta-analyses, suggesting that slower rates may be beneficial during shock wave lithotripsy. The results of this study show a significant improvement in the stone-free rate, a lower number of shocks needed during treatment, and fewer ancillary procedures needed. The number needed to treat was 6.2, meaning that 6 patients would be needed to treat at a rate of 60 shocks per minute as opposed to 120 shocks to prevent 1 unsuccessful treatment at 120 shocks per minute at 3 months of follow-up. I believe these data continue to support the concept that a slower rate is better in shock wave lithotripsy. The trade off, of course, is twice the treatment time per patient, which will decrease the number of patients who can be treated in a given time frame. (Reviewer-David A. Duchene, MD).

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Keywords: Lithotripsy, Ureteral Calculi, Urolithiasis

Print Tag: Refer to original journal article

Does Gastric Banding Increase Risk of Nephrolithiasis?

The Effect of Gastric Banding on Kidney Stone Disease.

Semins MJ, Matlaga BR, et al:

Urology 2009; 74 (October): 746-750

The bariatric surgical procedure of gastric banding does not appear to be associated with increased risk of kidney stone disease.

Objective: To evaluate the likelihood of being diagnosed with, or treated for, an upper urinary tract calculus after gastric banding.

Design: Insurance database chart review.

Participants: 201 patients who underwent gastric banding and a control group of 201 patients with morbid obesity.

Methods: Patients were identified from a national database of private insurance claims for a 5-year period from 2002 to 2006. All patients had at least 2 years of continuous follow-up, and the primary outcomes studied were the diagnosis and treatment of urinary calculus.

Results: The diagnosis of an upper urinary tract calculus occurred in only 3 subjects (1.5%) after gastric banding; 12 subjects (6%) in the comparison cohort were diagnosed with a urinary calculus. One patient in each cohort underwent a surgical procedure for the treatment of an upper urinary tract calculus (0.5%).

Conclusions: In short-term follow-up, gastric banding is not associated with an increased risk of kidney stone disease or kidney stone surgery in the postoperative period.

Reviewer's Comments: Obesity has become an epidemic in the United States and other countries with a "Western diet." Obesity itself is an independent risk factor for urinary stone disease. The most common bariatric surgery in the United States, a Roux-en-Y gastric bypass, increases the risk of kidney stone formation in the postoperative period. Gastric banding, an alternative bariatric surgery, has recently begun to gain popularity. The authors of this study attempt to determine if gastric banding has the same increases in stone risk as a Roux-en-Y gastric bypass. A large private insurance database was used to examine the outcome and showed that gastric banding did not increase the risk of stone disease and that the control group actually had a higher rate of nephrolithiasis. This study has the inherent weakness of being an insurance claims database, which may use improper or incomplete coding. However, it is not entirely surprising that the risk of stone disease is not increased, because many of the malabsorption consequences of Roux-en-Y bypass are not seen with gastric banding. However, longer term follow-up is needed. (Reviewer-David A. Duchene, MD).

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Keywords: Obesity, Nephrolithiasis, Bariatric Surgery, Risk Assessment

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Periurethral Suspension Stitch During RALP--Description of Technique

Periurethral Suspension Stitch During Robot-Assisted Laparoscopic Radical Prostatectomy: Description of the Technique and Continence Outcomes.

Patel VR, Coelho RF, et al:

Eur Urol 2009; 56 (September): 472-478

The periurethral suspension stitch during RALP results in an improved early continence rate at the 3-month follow-up.

Design/Objective: This nonrandomized study is a review of prospectively collected data on 94 robot-assisted radical prostatectomy (RALP) patients without placement of a periurethral retropubic suspension stitch and 237 RALP patients with the stitch.

Methods: All procedures were performed by an experienced surgeon. Continence rates were assessed with the Expanded Prostate Cancer Index Composite questionnaire at 1, 3, 6, and 12 months after the procedure. Continence was defined as no pads and no leakage of urine. **Description of Technique:** A standard dorsal vein complex (DVC) stitch was placed in patients in both groups. Next, the suspension stitch was placed using another monofilament polyglytone suture between the urethra and DVC, through the periosteum of the pubic bone, and back through the DVC and pubic bone to form a figure of 8. The stitch was tied with enough tension to suspend the DVC and urethra but leaving space between the DVC and pubic bone. The remainder of the procedure was performed in a standard fashion.

Results: There were no significant perioperative or pathologic differences between the 2 patient groups, including the apical positive margin rate. The group without the suspension stitch had continence rates of 33%, 83%, 95%, and 96% while the group with the suspension stitch had continence rates of 40%, 93%, 98%, and 98% at 1, 3, 6, and 12 months, respectively. The only statistically significant difference was at the 3-month follow-up (83% vs 93%; $P=0.013$).

Conclusions: "The suspension stitch during RALP resulted in a statistically significant shorter interval to recovery of continence and higher continence rates at 3 months after the procedure."

Reviewer's Comments: While the suspension stitch is similar to that described by Walsh for open prostatectomies, the current authors are the first to present data on a periurethral suspension stitch during RALP. The continence rates of both groups were >95% at 6 and 12 months, but the early continence rates were significantly better at the 3-month follow-up for those with the suspension stitch. Not only can the stitch improve early continence, it can also serve to provide more compression of the DVC to minimize bleeding. As reported in Shikanov and colleagues' article in this series of *Practical Reviews*, the robotic prostatectomy trifecta rates are comparable to major open prostatectomy series. The robot serves as a tool to improve surgery, but urologists must still seek out techniques such as this one reported here by Patel to continually provide patients with better results. (Reviewer-Kyle J. Weld, MD).

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Keywords: Prostate Cancer, Prostatectomy, Urinary Continence

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Robot-Assisted vs Laparoscopic Partial Nephrectomy

Robot Assisted Partial Nephrectomy Versus Laparoscopic Partial Nephrectomy for Renal Tumors: A Multi-Institutional Analysis of Perioperative Outcomes.

Benway BM, Bhayani SB, et al:

J Urol 2009; 182 (September): 866-873

RAPN is an alternative to LPN with equivalent outcomes and morbidity that may benefit surgeons with both limited and extensive laparoscopic experience.

Objective/Design: To present the results of a multi-institutional retrospective study of 129 cases of consecutive robot-assisted partial nephrectomy (RAPN) compared to 118 consecutive cases of laparoscopic partial nephrectomy (LPN).

Methods: In general, the techniques of each of these procedures were similar at each institution and included vascular control and sharp tumor excision. Tumors were classified as simple or complex based on the need for collecting system repair. The mean patient age was 59.2 years. The mean radiographic tumor size was 2.9 cm in the RAPN group and 2.6 cm in the LPN group.

Results: There were no significant differences in terms of overall operative time, rate of collecting system violation, pathological tumor size, intraoperative complication rates, conversion rates, or rate of positive margins. Statistically different rates were observed in favor of RAPN for estimated blood loss (155 vs 196 mL), hospital stay (2.4 vs 2.7 days), and warm ischemia time (19.7 vs 28.4 minutes). Tumor complexity had no effect on overall operative time for RAPN, whereas complexity significantly lengthened the LPN operative time. Among the subsets of simple and complex tumors, those treated with RAPN had a significantly shorter warm ischemic time than did those treated with LPN.

Conclusions: RAPN is an alternative to LPN with equivalent outcomes and morbidity that may benefit surgeons with both limited and extensive laparoscopic experience.

Reviewer's Comments: The authors are to be commended on presenting the largest comparison of RAPN and LPN to date. As mentioned by the authors, previous smaller studies have conflicting conclusions and show no advantage of the robot over a pure laparoscopic technique. Although statistically significant, the clinical significance of a difference of 41 mL of estimated blood loss and 0.3 hospital days is lacking. The most clinically relevant difference was the shorter warm ischemia time for the robot cases, especially for tumors labeled as complex. While the debate continues on acceptable warm ischemia times, a difference of nearly 10 minutes is impressive. (Reviewer-Kyle J. Weld, MD).

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Keywords: Nephrectomy, Carcinoma, Renal Cell, Laparoscopy, Robotics

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Intradetrusor Botulinum Toxin A for Treatment of Incontinence

Complete Continence After Botulinum Neurotoxin Type A Injections for Refractory Idiopathic Detrusor Overactivity Incontinence: Patient-Reported Outcome at 4 Weeks.

Khan S, Panicker J, et al:

Eur Urol 2009; (April 21): epub ahead of print

In this open-label study of patients with idiopathic detrusor overactivity incontinence treated with intradetrusor botulinum toxin A, 51% reported complete continence 1 month after treatment.

Objective: To investigate the change in patient-reported continence rates after intradetrusor injections of botulinum toxin A for the treatment of refractory idiopathic detrusor overactivity incontinence.

Design/Participants: This was a nonrandomized open-label study that enrolled 74 patients (51 women, 23 men) with refractory idiopathic detrusor overactivity incontinence. Median age was 56 years. To be included, patients had to have overactive bladder symptoms that were refractory to conservative therapy with anticholinergics and behavioral modification for at least 3 months. Additionally, patients had to have evidence of detrusor overactivity incontinence on a urodynamic study.

Methods: Patients were treated with a 1-time-only intradetrusor injection of 200 units of botulinum toxin A injected at 20 different sites. An assessment was performed at 4 and 16 weeks' postinjection using the Urogenital Distress Inventory. Additionally, postvoid residual urine and urinalysis were evaluated 2 weeks after injection. The primary outcome measure was patient-reported outcome of complete continence.

Results/Conclusions: All patients included in the trial had idiopathic detrusor overactivity incontinence. Four weeks after botulinum toxin A treatment, the proportion of patients reporting complete restoration of continence was 51% (38 of 74). The continence rates were similar in patients who had urge incontinence only when compared to those who had mixed incontinence.

Reviewer's Comments: According to the literature, between 42% and 87% of patients with neurogenic detrusor overactivity incontinence are continent after botulinum toxin A treatment. Although this study adds to the ever-growing body of literature demonstrating that refractory idiopathic detrusor overactivity can be well treated with botulinum toxin A, the ideal dosage and number of injection sites is yet to be established. (Reviewer-Karl J. Kreder, MD).

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Keywords: Botulinum Toxin Type A, Idiopathic Detrusor Overactivity, Incontinence, Quality of Life, Complete Continence

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Injected Bulking Agents for Intrinsic Sphincter Deficiency

Randomized Controlled Multisite Trial of Injected Bulking Agents for Women With Intrinsic Sphincter Deficiency: Mid-Urethral Injection of Zuidex via the Implacer Versus Proximal Urethral Injection of Contigen Cystoscopically.

Lightner D, Rovner E, et al:

Urology 2009; 74 (October): 771-775

This study failed to show the noninferiority of Zuidex placed via a nonendoscopic technique (the Implacer) compared to traditional Contigen endoscopic injection.

Objective: To determine whether Zuidex produces as good a result as Contigen in the treatment of urinary stress incontinence secondary to intrinsic sphincter deficiency in adult women.

Design/Methods: This was a randomized multi-center trial in which patients underwent either Zuidex treatment (injected using a noncystoscopic mid-urethral injection technique via an implacer) or Contigen treatment (using a proximal urethral cystoscopic injection). Potential subjects were all screened with a provocation test, urodynamic testing, pad testing, and bladder diary. Zuidex was administered via an implacer that allows for the sequential injection of 4 syringes of 0.7 mL per syringe in the mid-urethra without cystoscopic guidance. Contigen was injected in the standard fashion using cystoscopic-guided injection.

Results: 344 subjects were randomized across 23 North American sites, 227 to Zuidex, and 117 to Contigen. Comparison with baseline provocation tests at 12 months failed to show equivalence of Zuidex- to Contigen-treated patients, with a reduction in urinary leakage of at least 50% of provocation tests performed and 65% of Zuidex-treated patients versus 83.9% of Contigen-treated patients. This was also reflected in the mean loss on provocation test, improving from 69.8 g at baseline to 43.7 g for the Zuidex-treated patients and 66.5 g at baseline to 18.3 g for the Contigen-treated patients. The dry rates, defined in this trial as leakage of ≤ 2 g on provocative testing, was 36.7% for Zuidex and 44.1% for Contigen.

Conclusions: The results reported in this trial did not support previous results from a European study that used Zuidex to treat patients with stress urinary incontinence due to intrinsic sphincter deficiency. The current study did, however, allow inclusion of patients who had failed previous invasive therapy. Therefore, it may have involved a more select patient population as suggested by the higher mean values based on the provocation and leakage values and higher mean number of incontinent episodes per 24 hours compared to previous trials.

Reviewer's Comments: One possibility for the poorer results obtained in the Zuidex group is the loss of the distinct advantage of endoscopic guidance during periurethral injection. The implacer that is used to place Zuidex is a blind technique and, therefore, does not allow the surgeon to replace or reposition the needle when it is obvious that the injection site is too close to the mucosa. The blind nature of the technique, along with the fixed volume injected at each session in this trial, may have influenced the results. (Reviewer-Karl J. Kreder, MD).

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Keywords: Urinary Incontinence, Detrusor, Women, Bulking Agents

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Acupuncture--Minor Effect on Sperm Motility

A Prospective Randomized Placebo-Controlled Study of the Effect of Acupuncture in Infertile Patients With Severe Oligoasthenozoospermia.

Dieterle A, Li C, et al:

Fertil Steril 2009; 92 (October): 1340-1343

Acupuncture has not yet demonstrated a consistent, clinically relevant impact on male fertility.

Objective: To determine the effects of acupuncture on patients with severe oligoasthenozoospermia.

Design: Prospective, randomized, placebo-controlled trial.

Participants: 57 infertile patients with sperm concentrations <1 million/mL but >0 in at least 1 semen analysis. Exclusion criteria included patients with obstructive azoospermia, hypogonadotropic hypogonadism, or radiotherapy/chemotherapy within 1 year prior to the study.

Methods: Subjects were divided in a blinded, random fashion between real and placebo acupuncture carried out by certified, expert acupuncturists. Subjects received their treatment for 45 minutes twice weekly for 6 weeks. Patients received no explanations about their treatment. The primary outcome measure was sperm motility (World Health Organization categories A-C), and secondary end points included semen volume and sperm concentration. Four semen analyses were obtained in total to perform statistical analysis of the average results of 2 semen analyses before (≤ 5 and <3 months) and after (<2 and ≤ 3 months) the intervention.

Results: No significant changes were seen in individual motility categories A (rapid linear progressive), B (slow or nonlinear progressive), or C (nonprogressive) in either arm. The treatment group did have a significant increase in total A to C motility from 24.2% to 33.8% ($P=0.035$) compared to a placebo decrease in motility from 32.2% to 29.7% (ns). Sperm concentration increased significantly in the placebo group from .016 to .468 million/mL ($P=0.018$), but not significantly in the intervention group (.039 to .465 million/mL; ns). Semen volume significantly decreased in the intervention group from 4.2 to 3.7 mL ($P=0.041$), but was unaffected in the placebo arm (4.0 to 3.8; ns).

Conclusions: Acupuncture led to a small increase in overall sperm motility in men with severe oligoasthenozoospermia.

Reviewer's Comments: The authors are to be commended on a methodologically outstanding study. It is interesting to note that placebo acupuncture exists. Previous studies on acupuncture and male fertility have been limited methodologically and have suffered from lack of power (typically <40 patients; mean, approximately 20). Not surprisingly, results have been mixed, with the most common finding showing improved sperm morphology. Yu et al in 2008 performed a meta-analysis that showed insufficient evidence of a significant effect of acupuncture on male subfertility. Overall, andrologists try to improve semen parameters to shift couples to a less invasive intervention (IVF to IUI to natural pregnancy). In the present study, the difference in motility is significant statistically, but likely not clinically. The small change in motility could not compensate for low sperm concentrations and thus couples would still need in vitro fertilization. The significant increase in concentration in the placebo arm but not the intervention arm along with the decrease in semen volume in the acupuncture arm of this study are curious, and call study power and/or semen analysis' methodological reliability into question. (Reviewer-Tobias S. Kohler, MD, MPH).

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Keywords: Acupuncture, Male Fertility, Sperm Motility, Sperm Concentration

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Micro-TESE Impacts Testosterone Levels of Klinefelter's Syndrome

Serum Hormones in Patients With Nonobstructive Azoospermia After Microdissection Testicular Sperm Extraction.

Ishikawa T, Yamaguchi K, et al:

J Urol 2009; 182 (October): 1495-1499

Careful monitoring of T levels is essential in KS patients, but not normal men after micro-TESE.

Objective: To assess the hormonal milieu of men up to 18 months after microdissection testicular sperm extraction (micro-TESE).

Design: Retrospective review.

Participants: 100 genetically normal males with nonobstructive azoospermia (NOA) and 40 with nonmosaic Klinefelter's syndrome (KS).

Methods: Exclusion criteria included hypothyroidism, hyperthyroidism, current or past malignancy, clinical liver disease, or medications known to affect fat or glucose metabolism. Both groups had follicle stimulating hormone (FSH), luteinizing hormone (LH), and testosterone (T) drawn between 9 and 10 am and at 1, 3, 6, 9, 12, and 18 months after surgery. Mean testicular volume was 12.2 and 3.1 mL for the normal and KS men, respectively.

Results: Genetically normal men showed no significant change in T levels after micro-TESE. LH was significantly elevated for only the initial 3 months postoperatively in these men, and the FSH level remained elevated after 18 months in the study. Men with KS showed no difference in FSH or LH levels throughout the study, but T levels decreased an average of 30% to 35% for the first year following the procedure. At 18 months following micro-TESE, men with KS had a T level 75% of their preoperative value. Sperm yield was 41% and 50% for men without and with KS, respectively. No correlation was found between hormone results when compared to age or sperm yield.

Conclusions: The risk of significant hypogonadism after micro-TESE is low in genetically normal men, but high in men with KS.

Reviewer's Comments: This is a well done study that assesses the risk of hypogonadism after micro-TESE. An advantage of micro-TESE is the minimization of testicular tissue removed not containing sperm. The dissection itself, however, tends to be more extensive and thus can cause greater vascular compromise (especially in small testicles) compared to standard testicular biopsy techniques. KS affects 1 in 660 men and includes small firm testicles that often lead to azoospermia and androgen deficiency requiring T replacement. The characteristically small testicles found in KS likely have little to no testicular reserve and is thus very sensitive to surgery. These patients cannot compensate for testicular tissue loss through LH and FSH mechanisms since these are already maximally elevated pre-procedure. Normal men, however, can compensate by increasing LH and FSH to keep T levels normal. Interestingly, LH remains elevated for only 3 months, the length of 1 full sperm cycle. (Reviewer-Tobias S. Kohler, MD, MPH).

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Keywords: Azoospermia, Testicular Biopsy, Klinefelter's Syndrome

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Higher HDL May Reduce Risk of a Variety of Cancers

Prediagnostic Total and High-Density Lipoprotein Cholesterol and Risk of Cancer.

Ahn J, Lim U, et al:

Cancer Epidemiol Biomarkers Prev 2009; 18 (November): 2814-2821

HDL needs to be stressed as much as LDL when discussing risk reduction with patients.

Background: The focus on LDL (bad cholesterol) over the past several decades seems relevant, but researchers have known since the Framingham Heart Study that a high HDL is so cardio-protective that it may actually eliminate family history as a risk factor. Other recent studies have suggested that it may also reduce the risk of a variety of cancers in men and women, but no long-term observational study had been conducted until now.

Objective: To determine the impact of HDL cholesterol on cancer risk in one of the largest randomized trials of men.

Participants/Methods: 29,093 men in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study were followed for 18 years. Fasting serum total and HDL cholesterol were assessed at baseline and 7545 incident cancers were found.

Results: Higher HDL cholesterol was associated with a significant ($P=0.01$) reduced risk of cancer, especially for an HDL >50 mg/dL compared to <40 mg/dL. This inverse association of HDL and cancer risk was especially evident for lung, prostate, liver, and the hematopoietic system, but more so for lung and liver cancer after excluding cases diagnosed within 12 years of entry into this trial.

Conclusions: Higher HDL levels may be protective against a variety of cancers.

Reviewer's Comments: Holy HDL Batman! This is getting so exciting I can barely stand it anymore! A low LDL and high HDL may reduce the risk of a variety of cancers including some urologic cancers. HDL can be increased in so many ways, such as aerobic exercise, moderate alcohol consumption, belly fat reduction, smoking cessation, niacin (Niaspan®), fibrates, newer statin drugs (rosuvastatin or Crestor®), and eating healthy fats including some minimal amount of saturated fat. Another marker of HDL and total heart protective particles in the blood is the "Apo A" blood test where higher levels are better and there is no need to fast! Oh, and if increasing HDL and lowering LDL is not ultimately found to protect your patients from cancer, just apologize (sarcasm alert) that it only reduces the risk of the number 1 cause of death (aka heart disease) in men and women over the last 109 years in America! There is a new study that it may also protect us from the flu (no kidding), but I do not want to contemplate that right now because I am just too excited about all this other stuff that HDL and LDL already do for you. (Reviewer-Mark A. Moyad, MD, MPH).

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Keywords: LDL, Prediagnostic Total, High-Density Lipoprotein Cholesterol, Cancer Risk

Print Tag: Refer to original journal article

Low Cholesterol in Men May Reduce Risk of Prostate Cancer

Men With Low Serum Cholesterol Have a Lower Risk of High-Grade Prostate Cancer in the Placebo Arm of the Prostate Cancer Prevention Trial.

Platz EA, Till C, et al:

Cancer Epidemiol Biomarkers Prev 2009; 18 (November): 2807-2813

Reducing cholesterol to reduce the risk of aggressive prostate cancer needs a randomized trial now.

Background: At least 5 recent epidemiologic studies have found no impact of statins or low cholesterol on total prostate cancer risk, but all of them have found a reduced risk of aggressive, fatal, or advanced prostate cancer with a reduced cholesterol level or in men on statin drugs. The Prostate Cancer Prevention Trial (PCPT) is an ideal setting to examine the impact of low cholesterol on prostate cancer risk because of the end of study biopsy protocol.

Objective: To review the risk of prostate cancer in men with and without low cholesterol in the placebo and finasteride arm of the PCPT.

Design/Participants: A cohort study was conducted of 5,586 men randomized to the placebo arm; measurements of total cholesterol were compared from baseline to follow-up.

Methods: A total of 1251 prostate cancer cases were confirmed, and low cholesterol was considered <200 mg/dL and high cholesterol was >200 mg/dL.

Results: No association was found for low cholesterol and prostate cancer overall. However, men with low cholesterol had a 59% (OR, 0.41) lower risk of being diagnosed with a Gleason 8 to 10 prostate cancer compared to men with a high cholesterol level. Finasteride significantly ($P=0.02$) impacted the effect of low cholesterol on aggressive prostate cancer risk, so that the impact on reducing the risk of high-grade disease was no longer found in the treatment (finasteride) arm.

Conclusions: These findings support the ongoing series of observations that men with lower cholesterol levels have a reduced risk of high-grade prostate cancer.

Reviewer's Comments: Holy cholesterol Batman! This has to be potentially (notice the political correctness here) one of the most profound findings in urologic history and in all the years of studying low cholesterol and aggressive prostate cancer risk. In my opinion, we need to start telling patients immediately that having a low cholesterol or being on a statin may not only help reduce the risk of the number 1 cause of death in men, but also seems to reduce the risk of getting aggressive prostate cancer and perhaps even dying from prostate cancer. Also, the second preliminary finding in this study is simply potentially (politically correct again) stunning, which is the possibility that finasteride may attenuate the beneficial effects of having a low cholesterol on prostate cancer risk! Wow! Again, this is preliminary, but it puts the spotlight on other trials to immediately determine if this is the case with finasteride or dutasteride or whether this is a false or artificial finding. (Reviewer-Mark A. Moyad, MD, MPH).

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Keywords: Low Serum Cholesterol, High-Grade Prostate Cancer

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Immediate Cystectomy More Cost-Effective for T1G3 Bladder Cancer

Cost-Effectiveness Analysis of Immediate Radical Cystectomy Versus Intravesical Bacillus Calmette-Guerin Therapy for High-Risk, High-Grade (T1G3) Bladder Cancer.

Kulkarni GS, Alibhai SMH, et al:

Cancer 2009; (August 14): epub ahead of print

Younger men with T1G3 bladder cancer should understand the many benefits of immediate cystectomy, which include survival, quality of life, and cost benefits.

Objective: To determine the quality of life and cost differentials between treatments for high-risk, high-grade superficial bladder cancer.

Methods: The theoretical patient was a 60-year-old man with T1G3 bladder cancer. A Markov model was created to test the health effects and the costs associated with immediate nerve-sparing radical cystectomy with orthotopic neobladder or initial conservative therapy with *Bacillus Calmette-Guerin* (BCG) therapy and possible delayed cystectomy.

Results: For immediate cystectomy versus BCG therapy in T1G3 bladder cancer, the mean survival was 14.61 versus 13.89 years, quality-adjusted life years (QALY) was 9.46 versus 9.39, and lifetime cost was \$37,600 versus \$42,400, respectively.

Conclusions: Immediate cystectomy had better health outcomes, better survival, and lower overall costs than initial BCG therapy for T1G3 bladder cancer.

Reviewer's Comments: Bladder cancer is one of the most expensive cancers to treat over a lifetime. In our new era of health care reform, it is extremely valuable to understand the costs associated with different treatment approaches. Kulkarni and colleagues modelled the costs associated with 2 treatments for T1G3 bladder cancer, immediate cystectomy versus BCG. To do this, they created a comprehensive and robust model that incorporates every possible outcome, complication, quality-of-life harm or benefit, recurrence, and salvage therapy possible for this disease. Both quality-of-life outcomes and costs (in Canadian dollars) were applied to these scenarios. In general, immediate cystectomy was better for every important outcome (ie, survival, quality of life, and cost). For survival, it was better in 89% of the scenarios, and for quality-adjusted survival, it was better in 65% of scenarios. It had decreased costs 91% of the time for an estimated cost savings of \$4800. Another useful finding was that BCG became the preferred treatment with increasing age (>70 years) and comorbidities. These findings may help physicians and bladder cancer patients with the choices they face, although we are not used to factoring in costs when considering our health in America. It is comforting to know that in addition to costing less, immediate cystectomy in this setting is also better for survival and quality-related health outcomes. (Reviewer-Steven E. Canfield, MD).

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Keywords: Bladder Cancer, Cost-Effectiveness Analysis

Print Tag: Refer to original journal article

Eight- or 12-Core Prostate Biopsies Yield Similar Detection Results.

Optimizing Prostate Cancer Detection: 8 Versus 12-Core Biopsy Protocol.

de la Rosette JJMCH, Wink MH, et al:

J Urol 2009; 182 (October): 1329-1336

Prostate biopsy should include at least 8 cores on initial biopsy and the transition zone on repeat biopsy.

Objective: To determine if there is a difference in prostate cancer detection rates between an 8- versus 12-core biopsy protocol.

Design: Randomized, controlled, double-blind trial.

Participants/Methods: 269 eligible men underwent either 8-core lateral (group 1) or 12-core lateral and parasagittal (group 2) transrectal ultrasound (TRUS)-guided prostate biopsies. Patients with negative results were re-biopsied after at least 6 weeks in a 12-core fashion, with 4 transition zone biopsies included.

Results: There was no significant difference in prostate cancer detection between the 2 groups, with 34% detected in group 1 and 38% detected in group 2. Repeat biopsy revealed cancer in 15.8% of men with initial 8-core biopsy and in 12.7% of men with initial 12-core biopsy.

Conclusions: No significant difference in prostate cancer detection was seen using an 8-core versus 12-core biopsy protocol.

Reviewer's Comments: It is well established that the sextant biopsy schema is inadequate when performing TRUS-guided prostate biopsy for prostate cancer detection. Many investigators have studied the optimal number of cores for initial and follow-up biopsies, and most studies suggest that the optimal number for initial biopsy is between 8 and 12. Most guidelines agree that at least 8 biopsies should be taken. This study, by de la Rosette and colleagues, attempts to find a detection difference between 8 and 12 initial biopsies. The merits of this study are in its design and execution. The authors provide a power (sample size) calculation, describe the randomization and blinding, and even provide an interim analysis rule and description of intention-to-treat analysis. Unfortunately, the paper falls short on several issues, including the fact that it is severely underpowered, and although there are only a few dropped patients, it does not actually provide an intention-to-treat analysis. At most, we can say that it did not show a significant difference in detection between 8 and 12 cores, although there was a small trend for more cancer found with 12 cores. If it had had 1000 patients, would this have been significant? We will never know because the trial was stopped. Then again, the difference between 8 and 12 biopsies is usually not terrible for patients, so ultimately this paper is unlikely to change current practices. (Reviewer-Steven E. Canfield, MD).

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Keywords: Prostate Cancer, TRUS Biopsy

Print Tag: Refer to original journal article

Intercostal Upper Pole Access for PCNL Is Better Than Subcostal Access

Risks, Advantages, and Complications of Intercostal vs Subcostal Approach for Percutaneous Nephrolithotripsy.

Lang E, Thomas R, et al:

Urology 2009; 74 (October): 751-756

Intercostal upper pole access for PCNL may be the preferred route to achieve stone-free status and limit complications.

Objective: To evaluate differences of upper pole percutaneous nephrolithotripsy (PCNL) via intercostal versus subcostal access route with respect to stone-free status, operating time, and complications.

Design: Retrospective, chart review.

Participants: 142 patients undergoing upper pole access for PCNL.

Methods: 68 patients had PCNL for staghorn calculi, 57 had PCNL for upper pole calyx calculi, 12 had upper ureteral stones, and 5 had high-positioned kidneys. For staghorn calculi, 49 were accessed via intercostal and 19 via subcostal route. Of those with upper calyx stones, 38 were accessed via an intercostal approach and 19 via a subcostal route.

Results: 91 of 103 patients (88%) with intercostal access achieved stone-free status. Four patients (4%) had major complications and 6 patients (6%) had minor complications. Twenty-nine of 39 patients (74%) with subcostal access achieved stone-free status, while 3 patients (8%) had major complications and 8 patients (20%) had minor complications. Operating times varied, but were overall lower for intercostal access.

Conclusions: Intercostal access for upper pole PCNL showed a significantly higher stone-free rate, lower rate of complications, and reduced operative time compared to a subcostal access. Intercostal access is the route of choice for upper pole PCNL.

Reviewer's Comments: This retrospective study shows that intercostal upper pole access gives better results during PCNL compared to a subcostal approach when looking at success rates, complications, and operating room time. The higher success rate is not surprising based on kidney anatomy alone—access to the posterior upper pole calyx affords the shortest and straightest path to the renal pelvis, upper ureter, and both anterior and posterior inferior calices. An intercostal approach may also decrease bleeding complications, as it prevents potential "torquing" on the kidney and/or disruption of vessels that often occurs with rigid instruments in subcostal upper pole access and can lead to arteriovenous (AV) fistulae and pseudoaneurysms. The reason many urologists and interventional radiologists consider subcostal access, however, is the 7% to 10% rate of pneumo/hydro/hemothorax associated with supracostal access. The authors of this study only had a 1% incidence of pulmonary complications for supracostal access, which is hard to believe given that 69 of the supracostal accesses were above the 10th rib. Upper pole access is ideal in many cases, but one must be willing to deal with potential pulmonary complications. As this study shows, if you are going to go with upper pole access, you should go with intercostal access instead of subcostal access for better success rates and less overall complications, though. (Reviewer-David A. Duchene, MD).

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Keywords: Percutaneous Nephrolithotomy, Nephrolithiasis

Print Tag: Refer to original journal article

Percutaneous Access Should Be Directed at More Lateral Calices

Lower-Pole Fluoroscopy-Guided Percutaneous Renal Access: Which Calix Is Posterior?

Eisner BH, Cloyd J, Stoller ML:

J Endourol 2009; 23 (October): 1621-1625

For fluoroscopic lower-pole renal access, the most posterior calix is seen lateral on prone fluoroscopy, while the most medial calix on fluoroscopy is generally anterior.

Objective: To determine the orientation of the lower-pole calices to define the optimal site for lower-pole percutaneous renal access via a posterior calix.

Design: Retrospective review.

Participants: 101 renal units in patients who underwent a contrast-enhanced CT scan with delayed images while in the supine position.

Methods: Axial and coronal CT scans were evaluated to determine the number of calices in the lower pole (2 or 3), the orientation of each minor calix (posterior or anterior), and the relative orientation of the calices to one another.

Results: 101 renal units (50 left and 51 right) were evaluated. For the lower pole, 42% had 2 calices and 58% had 3 calices. The most medial calix on coronal imaging was anterior facing in 94% of kidneys, was the most anterior positioned calix in 83%, and was the most posterior positioned calix in only 9%. For the 42 units with 2 calices, the most medial calix was anterior facing in 95% of kidneys. In patients with 3 lower-pole calices, the most medial calix on coronal imaging was anterior facing in 93% of kidneys.

Conclusions: For percutaneous lower-pole renal access, the most medial calix on coronal CT imaging and presumably on retrograde opacification using fluoroscopy is almost always anterior facing and is the most anterior relatively positioned calix in the majority of kidneys. Percutaneous access should be directed at the more lateral calices because their posterior position and orientation provides optimal lower-pole renal access.

Reviewer's Comments: The authors are challenging the commonly taught mnemonic LAMP (Lateral Anterior Medial Posterior) when describing the anatomic relationship of lower-pole renal calices seen during fluoroscopy for percutaneous access. Systematic evaluation of CT scans was performed to try to better determine the true relationship of the calices. Unfortunately, the CT scans that were evaluated by the authors were done in the supine position, which makes the results difficult to apply to a procedure done in the prone position. The kidneys have significant movement between the supine and prone position. Many surgeons will also place either a bump under the patient, rotate the patient, or rotate the fluoroscopy arm during access. Often, this will lead to the most medial appearing calix to be posterior in orientation as the LAMP mnemonic would suggest. The study needs to be done with CT scans in the prone position and/or correlated with operative findings. Determining the posterior calix can be difficult and injecting a small amount of air is often helpful. Otherwise, the surgeon must know his or her positioning and how it relates to caliceal anatomy. It usually is not as simple as a mnemonic would suggest. (Reviewer-David A. Duchene, MD).

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Keywords: Percutaneous Nephrolithotomy, Radiological Guidance, Renal Stones

Print Tag: Refer to original journal article

Robotic-Assisted Laparoscopic Prostatectomy

Trifecta Outcomes After Robotic-Assisted Laparoscopic Prostatectomy.

Shikanov SA, Zorn KC, et al:

Urology 2009; 74 (October): 619-625

The trifecta rate (continent, potent, disease free) 2 years after RALP is 44%.

Objective: To evaluate the trifecta outcomes after robotic-assisted laparoscopic prostatectomy (RALP).

Participants/Methods: From a prospectively acquired database of 1362 patients who had undergone RALP, a total of 380 patients met the study inclusion criteria, which included preoperative continence, preoperative potency, and having had a bilateral nerve sparing procedure with at least 1 year of follow-up. Patients were followed up at 1, 3, and 6 months after surgery and then semiannually. All men were advised to practice a penile rehabilitation protocol with PDE-5 inhibitors. Postoperative continence and potency were assessed subjectively by the surgeon and objectively by the University of California Los Angeles Prostate Cancer Index questionnaire. The mean patient age was 58 years, and the mean preoperative prostate-specific antigen (PSA) was 6.2 ng/mL. The rates of patients without biochemical recurrence were 99%, 97%, 96%, and 91%, the objective continence rates were 33%, 60%, 73%, and 80%, the objective potency rates were 44%, 50%, 62%, and 69%, and the objective trifecta rates were 16%, 31%, 44%, and 44% at 3, 6, 12, and 24 months, respectively. The authors concluded that RALP provides trifecta rates comparable to open surgery.

Reviewer's Comments: This study is the first to report trifecta rates for RALP patients. Keep in mind that these patients were relatively young and healthy with normal continence and potency preoperatively. With good surgical candidates, experienced surgeons, and all the advantages of the robot, the objective trifecta rate was 44% at 2 years, which is comparable to open surgery results. In other words, approximately 50% of our patients will have cancer recurrence and/or life-altering consequences of surgery. The robot can certainly be a valuable tool in our quest for effective cancer treatment without disturbing quality of life; however, the robot is apparently not, in and of itself, the ultimate answer. (Reviewer-Kyle J. Weld, MD).

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Keywords: Prostate Cancer, Laparoscopy, Urinary Continence, Erectile Dysfunction

Print Tag: Refer to original journal article

Laparoscopic Partial Nephrectomy and WIT

Laparoscopic Partial Nephrectomy: Predictors of Prolonged Warm Ischemia.

Lifshitz DA, Shikanov S, et al:

J Urol 2009; 182 (September): 860-865

Three independent predictors of prolonged WIT found on multivariate analysis included BMI >30 kg/m², tumor size >4 cm, and a central tumor location.

Objective: To evaluate characteristics of tumors and patients to determine those that might predict prolonged warm ischemia time.

Participants/Methods: A prospectively maintained database of 145 patients who underwent laparoscopic partial nephrectomy (LPN) was analyzed for the impact of perioperative variables on warm ischemia time (WIT). The variables assessed were patient age, sex, body mass index (BMI), tumor size, tumor characteristics (side, solid vs cystic, location, and depth), previous surgery, clamping method, collecting system suturing, tumor volume, and the tissue margin around the tumor. The mean tumor size was 2.8 cm. Among the tumors, 17% were centrally located (abuts the collecting system). The artery alone, artery and vein separately, or artery and vein en bloc were clamped in 17%, 50%, and 33% of the cases, respectively. Collecting system suturing was required in 72% of cases. Median WIT was 31 minutes, and 54% of cases had a WIT of >30 minutes. The significant factors affecting WIT on univariate analysis included greater tumor size, higher BMI, central location, collecting system suturing, longer operative time, and greater pathological tumor margin. The authors incorporated the 3 independent predictors of prolonged WIT found on multivariate analysis into their definition of a high-risk patient who possesses ≥ 2 of the following risk factors: BMI >30 kg/m², tumor size >4 cm, and a central tumor location. Based upon multiple linear regression analysis, a high-risk patient is likely to experience a WIT 6 minutes longer and is 5 times more likely to have WIT >30 minutes compared to a patient not at risk. A nomogram was constructed to predict WIT >30 minutes during LPN.

Reviewer's Comments: The ability to predict a prolonged WIT during LPN is a valuable tool. Patients with large central tumors and high BMI are known to be challenging, but now we can use data to quantify the risk. The key advantage these data provide is the ability for each surgeon to determine the most appropriate treatment for each individual patient. If the patient is high-risk for a prolonged WIT, administering renal hypothermia during an open procedure or referral to a high volume center of excellence should be considered. (Reviewer-Kyle J. Weld, MD).

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Keywords: Kidney, Neoplasms, Warm Ischemia, Laparoscopy, Body Mass Index

Print Tag: Refer to original journal article

Nocturia Is Surprisingly Prevalent Condition in the General Population

Nocturia Frequency, Bother, and Quality of Life: How Often Is Too Often? A Population-Based Study in Finland.

Tikkinen KAO, Johnson TM II, et al:

Eur Urol 2009; (April 3): epub ahead of print

Two nightly voids constitute a slightly impaired quality of life, and ≥ 3 voids moderately affect well-being.

Objective: To evaluate the association between the frequency of nocturia and bother and health-related quality of life.

Participants/Methods: Questionnaires were mailed to 3,000 men and 3,000 women between the ages of 18 and 79 years randomly selected from the Finish population registry. Age stratification was used in subject selection. Pregnant women and women within 6 weeks of delivery were excluded as were those patients who reported urinary tract infections. Patient responses to the American Urological Association Symptom Index and the Danish Prostatic Symptom Score were combined to assess nocturia. Health-related quality of life was measured with the generic 15D instrument.

Results: Of 6,000 subjects who were approached for this study, 3,597 were included. Nocturia and no bother were reported by approximately 16% of men and 20.5% of women. The degree of bother from nocturia increased with the increase of nocturia in both sexes and, moreover, in comparing 2 adjacent categories, the increase was statistically significant, with each increment in the number of nightly voids. Approximately 50% of the patients with 1 void per night reported no bother. A similar proportion of subjects with 2 voids reported small bother, and approximately one-half of those with 3 and 4 voids per night reported bother to be "moderate" or "major."

Conclusions: Nocturia is a surprisingly prevalent condition in the general population that can adversely affect quality of life. Health-care providers should be more cognizant of this problem.

Reviewer's Comments: Since this paper demonstrated that 1 nightly void did not identify subjects with interference from nocturia, 1 episode of nocturia is not a suitable criterion for clinically relevant nocturia. (Reviewer-Karl J. Kreder, MD).

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Keywords: Age Factors, Overactive Bladder Prevalence, Prostatic Hyperplasia, Sex Syndrome Terminology, Urinary Incontinence, Urination Disorders, 15D

Print Tag: Refer to original journal article

Follow-Up Rates Better in Women Who Undergo Urodynamics

Urodynamics Prior to Treatment as an Intervention: A Pilot Study.

Majumdar A, Latthe P, Tooze-Hobson P:

Neurourol Urodynam 2009; (September 3): epub ahead of print

Urodynamics do not appear to lead to better treatment response when compared to treatment based on tests that did not include urodynamics.

Objective: To evaluate whether treatment plans based on urodynamics lead to better treatment response compared to treatment based on symptoms alone.

Design/Participants: This study was designed as a patient preference trial. All patients >18 years of age referred from their primary care physician with urinary incontinence and lower urinary tract symptoms were invited to participate with the help of a patient information leaflet, which was sent out prior to the patient's appointment. The participants were given a choice of 1 of the following: (1) to undergo urodynamics and then undergo treatment based on history, urine dipstick, 3-day bladder diary as well as results of the urodynamic study or (2) to formulate and implement a treatment plan based on symptoms, urine dipstick, and 3-day bladder diary alone. Those who did not express a preference for choice 1 or 2 were invited to be randomized to either group. Outcomes were measured by improvement and mean scores on the Kings Health questionnaire and the Incontinent Episode Frequency at 6 months. The authors also examined the rate at which the patients kept their subsequent appointments.

Results: 309 women were recruited; 99 were randomized. Of the 309 women, 153 (49.4%) opted for urodynamics and only 57 (18.4%) opted for conservative treatment in the first instance. There was a trend for women who were >50 years of age to prefer conservative management, whereas those who preferred urodynamics and randomization tended to be younger. The preference for urodynamics was also significantly affected by stress incontinence, voiding difficulty, and nocturia. There was no difference between the Kings Health questionnaire scores before and after intervention in either group. There was, however, a statistically significant difference in incontinent episodes, frequency, and enrollment between all 3 groups.

Reviewer's Comments: A larger multicenter randomized trial in which patients are randomly allocated to management according to the urodynamic findings, history, and clinical examination will be needed to evaluate whether there is really an improvement in clinical outcomes (as well a cost-associated study) with urodynamics. One positive finding was that there was a higher follow-up rate in patients who chose to undergo urodynamics compared to those who chose conservative treatment. (Reviewer-Karl J. Kreder, MD).

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Keywords: LUTS, Prospective, Urodynamics

Print Tag: Refer to original journal article

Cellular phone EMWs May Lead to Increase Oxidative Stress in Semen

Effects of Radiofrequency Electromagnetic Waves (RF-EMW) From Cellular Phones on Human Ejaculated Semen: An In Vitro Pilot Study.

Agarwal A, Desai NR, et al:

Fertil Steril 2009; 92 (October): 1318-1325

Cell phone EMWs lead to decreases in sperm motility and viability, along with an increase in the amount of reactive oxygen species.

Objective: To determine if semen parameters are affected by radiofrequency electromagnetic waves (EMW), such as those emitted by cellular phones.

Design: In vitro, prospective, pilot study.

Participants: 23 healthy donors and 9 patients from an infertility treatment clinic submitted semen samples for analysis. Each donor specimen was split into 2 groups; group 1 was the control group and not exposed to cell phone EMWs, while group 2 was exposed to cell phone EMWs.

Methods: The exposed semen was subjected to EMWs from a cellular phone at a distance of 2.5 cm and at a frequency of 850 Mhz (most common U.S. frequency) in talk mode for 1 hour. Semen analysis was analyzed for sperm concentration, motility, and viability according to World Health Organization guidelines, along with other tests to assess for oxidants and antioxidants and DNA fragmentation.

Results: There was no difference in sperm concentration between exposed versus unexposed samples (58.87 ± 34.34 million/mL vs 58.84 ± 35.20 million/mL), DNA fragmentation, or antioxidant capability. A significant difference was seen in sperm motility ($P < 0.003$) with the exposed group having $48.62\% \pm 17.36\%$ motile sperm versus $52.11\% \pm 18.43\%$ in the unexposed group. A significant difference ($P < 0.001$) was seen in sperm viability, with the mean viability for exposed versus unexposed samples being $52.33\% \pm 13.21\%$ and $58.97\% \pm 14.81\%$, respectively. Significant differences were seen in sperm motility ($P = 0.01$) and sperm viability ($P < 0.001$) in the healthy donor subjects, but not among the patients from the infertility clinic. Reactive oxygen species (ROS) were higher in exposed samples versus unexposed samples in both the donor and patient groups ($P = 0.04$ and $P = 0.014$, respectively).

Conclusions: This study demonstrates that in vitro, cell phone EMWs leads to decreases in sperm motility and viability, along with an increase in the amount of reactive oxygen species.

Reviewer's Comments: This is an interesting article in which a cell phone in talk mode exposed to semen led to an increase in measurable free radicals. This in turn may have decreased motility and vitality of sperm, especially in those who did not have a high free radical count at baseline (healthy donors). The in vitro model was quite different from real world conditions however, where men have to be using a blue tooth headset with their phone on talk mode (on their belt or in their pants pocket), possibly allowing electromagnetic waves to penetrate clothing, scrotal tissue, and into the protective confines of the testicle and reproductive tract for who knows how long. Despite this limitation, it is probably worth mentioning to men actively pursuing pregnancy who use cell phones in proximity to their scrotum. This is in addition to the numerous other potential perils to fertility, such as hot tubs, smoking, cannabis use, and poor diet to name a few. (Reviewer-Tobias S. Kohler, MD, MPH).

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Keywords: Fertility, Sperm, Radiofrequency Electromagnetic Waves, Cell Phone Radiation, Reactive Oxygen Species, Oxidative Stress

Print Tag: Refer to original journal article

Are TESE Techniques Safe in Azoospermic Males With HIV or HCV?

First Report of the Absence of Viral Load in Testicular Sperm Samples Obtained From Men With Hepatitis C and HIV After Washing and Their Subsequent Use.

Garrido N, Gil-Salom M, et al:

Fertil Steril 2009; 92 (September): 1012-1015

Men with azoospermia and either HIV or HCV are candidates for testicular sperm extraction for use in assisted reproductive techniques after multiples washings and confirmation of viral absence by PCR.

Objective: To determine if testicular sperm extraction (TESE) techniques can be used in a safe and viable manner in azoospermic males with HIV or hepatitis C virus (HCV).

Participants/Methods: 3 male patients underwent testicular biopsy with subsequent sperm washing protocol followed by a polymerase chain reaction (PCR) assay to detect viral presence. The negative sperm samples were then used for assisted reproductive techniques. Among the 3 cases, all had a normal karyotype and no microdeletion of Y chromosome. Patient 1 was a 40-year-old male diagnosed with HIV (negative viral load) who was previously fertile then suffered from ejaculatory obstruction due to chronic prostatitis. Patient 2 was a 38-year-old male who was HCV+ (negative viral load) with anejaculation due to quadriplegia at C4 level (failed electroejaculation). Patient 3 was a 56-year-old hepatitis C+ (negative viral load) male with azoospermia secondary to vasectomy. **Methods:** Tissue from open testicular biopsies with local anaesthesia was mechanically broken up with glass slides in 2 mL of Sperm Medium. Fluid was analyzed microscopically, if motile sperm were seen the specimens were frozen. If sperm were absent, the fluid was spun down and resuspended in Sperm Medium (Medicult, Norway) and incubated at 37°C for 1 hour. If motile sperm were then seen, the cell suspension was centrifuged and washed an additional 3 times. Half of the final sample was immediately frozen for PCR viral analysis. Once confirmed as virus negative, the sperm samples could be used for infertility treatments.

Results: 2 pregnancies were achieved in 5 follicular aspirations. One pregnancy was currently ongoing and the other resulted in a healthy newborn. The fertilization rate from the TESE samples was 72.1%. All female partners and newborns were HIV and HCV negative after 3 months.

Conclusions: TESE-intracytoplasmic sperm injection is a viable option for azoospermic seropositive males after appropriate sperm washing protocols and confirmation of negative PCR.

Reviewer's Comments: The authors offer solutions to the last logistical dilemma in achieving safe pregnancy (for both mother and child) for men who are seropositive for HIV or HCV. Men with positive viral loads from these diseases can routinely safely father children after use of sperm washing protocols with PCR confirmation of viral absence. However, about 3% of HIV or HCV seropositive men are severely oligospermic or azoospermic. In these cases, pregnancy after washing protocols is impractical. Epididymal sperm retrieval has successfully been used in this situation previously. This paper, however, details the process of safe use of testicular biopsy samples, which are thought to have increased viral transference risk due to the presence of blood and round cells. Thus, HIV or HCV seropositive men with nonobstructive azoospermia can now safely father children. (Reviewer-Tobias S. Kohler, MD, MPH).

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Keywords: HIV, HCV, Infertility, Azoospermia, Testicular Sperm Extraction

Print Tag: Refer to original journal article