tumor infiltration, postoperative tumor grade, stage and Gleason score.

**Conclusions:** Patients with higher prostate volume before RP, had higher postoperative PSA, postoperative uPSA levels and grade of AGA after RP. The difference emerged most probably due to higher local DHT activity in the scalp and PSA-secreting urethral glands.

**S91**

**Using image guided radiotherapy for prostatic cancer treatment**

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**Introduction and Objectives:** Modern Image Guided radiotherapy (IGRT) techniques allow physician to relocate the target volume in order to ensure a better CTV coverage by the delivered dose. CTV margin enlargement to obtain the PTV is a critical step during planning procedures and the aim of this study is the evaluation of movements of CTV (due to internal movements and setup errors) obtained by IGRT methods in order to individualize the PTV margin

**Material and Methods:** Patients affected by prostate cancer were planned twice during CTV delineation procedure: the 1st time by using a standard CTV to PTV enlargement procedure with margins common to all patients. Afterwards the patients started the treatment and during the 1st week of therapy each one underwent to daily Cone Beam CT (CBCT) scanning before dose delivery (5 CBCT scans for each patient). Subsequently CBCTs were registered with the simulation CT by overlapping the images in order to obtain the superimposition of all CT isocenters, hence allowing the overall movements evaluation both for organ motion and setup movements at the same time. A new CTV-IGRT contour was defined by merging all the positions of the prostate and seminal vesicles in the 6 CTs (1 simulation + 5 CBCT) and finally a further 3 mm margin in all directions was added to obtain the a individualized IGRT based PTV. Both the 1st part of the treatment (before the IGRT based optimization) and the 2nd one were planned using IMRT optimization procedures. The size of PTVs in both phases of the treatment were compared. DVH were collected to compare the dose distribution on bladder and rectum before and after the IGRT optimization process of PTVs in order to evaluate differences in dose distribution due to the PTV optimization procedure

**Results:** Thirteen prostate cancer patients were enrolled in this study. The shrinking of volumes is always significant comparing the pre-IGRT PTV volume with the post-IGRT optimized PTV using the paired sample T-test. A dosimetric analysis was performed by comparing the volume of the rectum and the volume of the bladder receiving 50 Gy (V50) in all the patients calculating these values on the delineated critical structures on the simulation CT. The reduction of the V50 was significant only for the rectum and not for bladder.

**Conclusions:** Using CBCT for the optimization of PTV delineation seems to be helpful reducing the amount of the rectal volumes receiving highest dose levels. This fact is due to the PTV shrinkage obtained after a re-delineation and re-plan realized thanks to the CBCT imaging data registered with the simulation CT and this nevertheless a further PTV enlargement over the overlapped PTV delineated on the simulation and cone beam ct scans. In conclusion the CBCT can be considered not only a way to relocate the CTV just during the therapy of the patient but also a useful tool to further optimize the planning procedures on individualized imaging data obtained directly during the treatment phase

**S92**

**Impact of radiation therapy plus hormonal therapy in patients affected by high risk prostate cancer**

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**Introduction and Objectives:** The role of Radiation Therapy (RT) for high risk prostate cancer is still debated. The aim of this study was to evaluate the biochemical recurrence free survival (b-Ned) in high-risk prostate cancer treated with RT combined Hormonal Therapy (HT).

**Material and Methods:** Patients affected by high risk prostate cancer were selected for this retrospective analyses. RT was combined with HT. Radiotherapy was delivered on prostate (CTV1) and seminal vesicles (CTV2) ± pelvic lymph nodes (CTV3); total dose was: 64–74 Gy (1.8 Gy/fx), according to T categorize, to CTV1, 55 or 64 Gy to CTV2 according to seminal vesicles status and 45 Gy (1.8 Gy/fx) to CTV3. 3D-conformal RT was always performed while intensity modulated RT was used when CTV3 was avoided. HT were administered combined to RT both neo-adjuvant (NAD) both concomitant and adjuvant (AD). High risk was defined according to the American Society for Therapeutic Radiology and Oncology [ASTRO] (Gleason score [GS] ≥8 and/or PSA ≥20 ng/mL). B-Ned was defined using ASTRO definition based on a sequence of 3 consecutive PSA rises. Acute and late toxicity were evaluated according to the EORTC-RTOG toxicity scale.

**Results:** From January 1998 to December 2007, 127 patients affected by high risk prostate cancer were identified. Median age was 71 years (range 42–80 yrs). Gleason score was ≤7 in 63 pts, 8 in 39 pts, 9 in 22 pts and 10 in 3 pts. PSA value at the diagnosis was <10 ng/mL in 24 pts, >10 and <20 ng/mL in 25 pts, ≥20 ng/mL in 82 pts. 19 patients presented Gleason score ≥8 and PSA ≥ 20 ng/mL. Clinical stages were distributed as follows: T1c: 1; T2a: 4; T2b: 4; T2c: ; T3a: 76; T3b: 40; T4: 1. Mean duration of HT was 26 months. Pelvic lymph node was treated in 62 pts while the dose delivered to prostate was 64 Gy in 4 pts, 70 Gy in 37 pts and 74 Gy in 86 pts. Acute gastrointestinal (GI) and genitourinary (GU) toxicity grade >2 was seen in 4 pts (3%) and 3 (2%) pts respectively while the same grade of late toxicity was seen in 3 pts (2%) respectively. Twenty seven pts developed a biochemical recurrence, with an actuarial 5-year b-Ned rate of 68%. The mean biochemical progression-free survival time was 86 months. Correlating the b-ned with the stage of disease, there is not statistical significance ($p = 0.4$).

**Conclusions:** Our data suggest that RT combined with NAD, concomitant and AD HT for high risk prostate cancer is able to obtain good 5-years b-Ned with acceptable toxicity.

**S93**

**The modified terminologia Anatomica of the nerve sparing laparoscopic radical prostatectomy: important landmarks of the procedure related with functional anatomy**

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**Introduction and Objectives:** The aim is to stress important anatomic landmarks and functional importance of these in a model of patient who had laparoscopic radical prostatectomy.

**Material and Methods:** Extraperitoneal nerve-sparing radical prostatectomy might be summarized into seven steps. Terminologia Anatomica and its functional importance were

based on this classification. Significant anatomic landmarks were pointed out. Steps were;
1. Anterior abdominal wall and trocar positioning,
2. Fascia pelvis (endopelvic fascia) and incision of fascia pelvis,
3. Detachment of puboprostatic complex,
4. Urethral sphincteric complex, preservation of continence unit,
5. Anatomic apical dissection of prostate and urethra,
6. Fascia rectoprostatica (Denonvillier fascia), dissection of posterior part of prostate,
7. Neurovascular bundle, pedicle dissection, pelvic plexus related with erectile function preservation.

**Results:** In steps, important anatomic landmarks were:
1. linea alba, linea arcuata (arcuate line), linea semilunaris, umbilicus, spina iliaca anterior superior (anterior superior iliac spine), m. rectus abdominis (rectus abdominis muscle), a. and v. epigastrica superior – inferior (superior and inferior epigastric artery and vein), n. subcostalis (subcostal nerve);
2. fascia pelvis parietalis (endopelvic fascia), arcus tendineus, fascia obturatoria internus (internal obturator fascia), fascia iliaca (iliac fascia);
3. ligamentum puboprostaticum (puboprostatic ligament), plexus venosus dorsalis (Santorini plexus), fibromuscular and soft tissue, symphysis pubis (pubic symphysis), detrusor apron, vena dorsalis profunda penis (deep dorsal vein of penis), plexus venosus vesicalis, plexus venosus prostaticus;
4. M. sphincter urethrae internus-externus (external-internal urethral sphincter);
5. plexus venosus dorsalis (avoid injury), M. levator ani, neurovascular bundle (avoid injury), smooth muscle of the urethra;
6. fascia rectoprostatica, posterior part of prostate, vesicula seminalis, perirectal fatty tissue;
7. A. vesicalis inferior (inferior vesical artery), N. cavernosus penis (cavernous nerve of penis), a. and v. capsularis, pelvic plexus, lateral pelvic fascia, levator fascia (interfascial dissection), fascia periprostatica (periprostatic fascia) (intrafascial dissection), capsula prostatica (prostatic capsule).

**Conclusions:** Focusing on anatomy of laparoscopic radical prostatectomy with suitable terminology might be the gold standard way of learning for this difficult surgical technique.

## S94
## Inguinal hernia in men undergoing sectio alta surgical approach

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**Introduction and Objectives:** Inguinal hernia is a common complication after radical retropubic prostatectomy. We analyzed its incidence in several lower midline incision procedures. We compared the incidence and tried to figure out where it is most frequent. We also analyzed the impact of simultaneous pelvic lymph node dissection, duration of surgery and patient age.

**Material and Methods:** The study included 120 men, aged 65 to 75 years. They were separated in three groups of 40 patients according the type of operation: radical prostatectomy, radical prostatectomy+lymph node dissection and open prostatectomy for benign prostatic hyperplasia, respectively. Postoperative anastomotic stricture and preoperative presence of incipient inguinal hernia were exclusive criteria. The risk factors were analyzed using a Cox proportional hazards model.

**Results:** The period of follow-up ranged from 10 to 137 months, with a median of 64 months. The incidence of inguinal hernia was 10% (4 of 40), 15% (5 of 40), and 2.5% (1 of 40) in radical prostatectomy, radical prostatectomy+lymph node dissection and open prostatectomy for benign prostatic hyperplasia groups, respectively. Multivariate Cox proportional hazards analysis demonstrated that open RRP, with or without performed lymph node dissection were significant risk factors for the development of inguinal hernia. The operative time and patient age showed no significant impact on the inguinal hernia appearance in our study group.

**Conclusions:** Inguinal hernia is an important postoperative complication in all lower midline incision procedures including radical retropubic prostatectomy. Simultaneous pelvic lymph node dissection, duration of surgery and age were not significant risk factors in this study. Urologists should recognize the inguinal hernia as one of the major late complications of section alta approach and examine the groin in the follow up period.

## S95
## Relationship between obesity and prostate cancer at the time of biopsy

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**Introduction and Objectives:** To evaluate the relationship between the obesity and prostate cancer.

**Material and Methods:** From April 2006 and April 2009 864 asymptomatic men with rising PSA underwent extended TRUS guided 12-cores biopsy and the histological examination was made by the same doctor from our pathology department. The median PSA was 5.75 ng/ml (ranged from2.8 to 8.7) and the median age was 62 years(51–73 years).We have investigated the correlation, between obesity(Body Mass Index ≥30 kg/m2) and positive biopsy, Gleason score and PSA. The results analyzed with the SPSS 14.0 Edition.

**Results:** From our 864 patients, 147 (17%) had obesity (BMI > 30) and 717 (83%) had a normal B.M.I Obese men had median PSA 5.65 ng/ml (8.6–2.7) and median age 60 years (51–71) and men with low Body Mass Index had median PSA 5.77 ng/ml (8.7–2.85) and median age 62.5 years (52–73). From the obesity group, we found prostate cancer in 45 (31%) patients. At the same time of the 717 patients with normal BMI 228 (32%) had prostate cancer ($p = 0.01$). From the 45 men of the obesity group, six (13%) had Gleason score >7 and from the 228 men with normal BMI only 15 (6.5%) had Gleason score >7 ($p = 0.001$).

**Conclusions:** From our results it seems that obesity was not statistical significant related with prostate cancer at the time of biopsy but obese men had a greater likelihood approximately twice to develop a high grade disease.

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**Poster Session 7: Stone disease**
**Saturday, 10 October 2009, 09:40–11:40**
**Room 1**

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## S96
## Epidemiologic characteristics of urolithiasis in Turkey: Update in 2009

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**Introduction and Objectives:** The worldwide prevalence and epidemiologic characteristics of urolithiasis appear to have changed in the last decades. The aim of the study is to update the current status of the disease in Turkey.

**Material and Methods:** A representative sample of 2468 persons aged between 18–70 years in 33 provinces of Turkey was enrolled in the cross-sectional study conducted with A&G, a professional market investigation company. Participants were