administration. The association between AdjRT and UC recovery was assessed in univariable and multivariable Cox regression analyses after accounting for age at surgery, pre-operative risk groups, nerve-sparing status and year of surgery.
Results: Mean age at surgery was 63.3 yrs (median 63.5; range 39-85 yrs). Pre-operative risk groups allowed to identify 528 (47.0%), 460 (41.0%) and 135 (12.0%) patients in the low, intermediate and high risk group, respectively. The 1 and 2-years UC recovery rates were significantly higher for patients not treated with AdjRT, as compared to patients receiving AdjRT. (71% vs. 45% and 77% vs. 50%, respectively; p<0.001). When patients were stratified according to D'Amico risk groups, AdjRT did not impact on the rate of UC recovery in low risk patients (Log rank p=0.1), while AdjRT significantly affected the rate of UC recovery in intermediate (1yr: 67% vs. 43%; 2yr 74% vs. 47%; p<0.001) and high risk patients (1yr: 47% vs. 32%; 2yr 52% vs. 39%; p=0.042). Data were confirmed at multivariable Cox regression analyses where AdjRT was independently associated to a lower rate of UC recovery (p<0.001), after accounting for patient age, clinical oncologic characteristics, nerve-sparing status and year of surgery. Patients not receiving AdjRT had a 1.6 fold higher probability of recovering full continence after surgery.
Conclusions: We demonstrated that patients treated with AdjRT have a decreased probability of achieving full continence (no pads) after RP. These results should be take in account when RP and AdjRT are considered has treatment option in patients with intermediate or high risk prostate cancer.

675 TIME TO BIOCHEMICAL RECURRENCE IS A STRONG AND INDEPENDENT PREDICTOR OF CSS AND OS IN HIGH-RISK PROSTATE CANCER

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Introduction & Objectives: Even though more than half of the patients with high-risk prostate cancer develop biochemical recurrence (BCR) after surgery, the outcome of those who fail is not invariably poor. This study aimed to assess the value of time to BCR as a predictor of cancer-specific survival (CSS) and overall survival (OS) in high-risk PCa patients, treated with radical prostatectomy (RP).
Materials & Methods: The study included 1584 patients with pre-operative high risk prostate cancer (PSA>20 ng/ml or cT3-4 or biopsy Gleason 8-10) treated with RP and pelvic LND at 7 tertiary referral centers between 1987 and 2009. Adjuvant and salvage radiotherapy (RT) and hormonal treatment (HT) were administered according to institutional protocols. BCR was defined as PSA>0.2 ng/ml on two subsequent measurements.
Results: Mean age at surgery was 65.4 yrs(median 66 yrs; range 41-89). Mean preop PSA was 33.5 ng/ml (median 22.8 ng/ml; range 1-1710 ng/ml). Final Gleason sum was 2-6, 7 and 8-10 in 32.3, 37.7 and 30.0%, respectively. Pathological stage was T2, T3a and >T3a in 23.5, 33.0 and 43.5%, respectively. 24.2% had lymph node invasion and 47.5% had positive surgical margins. Adjuvant RT and HT were administered in 22.1 and 46.4%, respectively. At a mean follow up of 67.1 months (median 62 months; range 1-206), BCR occurred in 33%. CSS was significantly worse in patients with BCR occurring within 2 years from surgery (n=278, 17.7%), compared to those with BCR occurring beyond 2 years (n=239, 15.3%) (10-year CSS 73.2% vs 85.3%, p=0.0008). When the analysis was repeated for the subgroup of 406 patients who did not receive any (neo-) adjuvant treatment, results were even more pronounced with 10-year CSS of 77.2% for the group of patients with BCR ≤2 yrs versus 100% for the other groups (p<0.0001). OS of patients with BCR >2 yrs was identical compared to patients who never experienced BCR in follow-up (10-year OS 75.9% vs 81.4%, p=0.83), while OS of patients with BCR ≤2 yrs from surgery was significantly worse (10-year OS 58.3% vs. 81.4%, p<0.0001). BCR ≤2 yrs (p<0.0001, HR 4,5191 (95% CI 2,9494 to 6,9240) was the strongest independent predictor of CSS in the Cox multivariable model, correcting for PSA, pathological stage and Gleason sum, lymph node invasion and surgical margins.
Conclusions: Outcome of high risk prostate cancer is not invariably poor. However, about 1 in 5 patients experience biochemical recurrence within 2 years from surgery. This group is at significantly elevated risk for cancer related death, and should be considered for trials assessing aggressive systemic treatment strategies.

676 IS INTRAOPERATIVE RADIATION THERAPY AND RADICAL PROSTATECTOMY BETTER THAN ADJUVANT RADIATION THERAPY AFTER RADICAL PROSTATECTOMY FOR CLINICAL LOCALLY ADVANCED PROSTATE CANCER?

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Introduction & Objectives: Radical prostatectomy (RP) for locally advanced prostate cancer (PCa) is frequently combined with adjuvant radiotherapy (ART) and hormonal therapy (HT) in a multimodal approach. Intraoperative radiotherapy (IORT) is also under assessment for locally advanced PCa. We analyzed retrospectively our experience with RP and IORT for locally advanced PCa and compared the results with a similar group of patients who underwent RP and ART in the 5 years before the introduction of IORT at our centre.
Materials & Methods: Between November 2005 and November 2010, 45 patients with locally advanced PCa underwent RP+IORT (Group A) with a minimum follow up of 6 months. After exposure of the anterior face of the prostate, a dose of 12 Gy is given by a dedicated linear accelerator (MOBETRON) and then RP is completed. If definitive pathology confirmed an advanced disease, a post-operative RT (45 Gy) was prescribed. Group A was compared with 50 patients who underwent RP and ART (Group B) before November 2005.
Results: Significant differences between Group A and B were observed only for mean operating time (IORT adds 30 minutes on average to the procedure) and incidence of anastomotic strictures (table 1). Group B has a higher number of pT3a tumors and a lower number of pT2 tumors compared to Group A. Lymphocele occurred in 4/45 patients (8%) in Group A and in 5/50 (10%) in Group B; one pelvic haematoma occurred in both groups. No significant differences were observed for hospital stay and catheterization time. In Group A, 3 patients experienced Grade 0-2 rectal toxicity (diarrhea and tenesmus), while 4 patients in Group B experienced these symptoms. For both groups, Grade 2 urinary toxicity occurred in one patient. No significant differences have been observed for complications or recovery of urinary continence.

Table 1

	Group A (N: 45)	Group B (N: 50)	P value
Neoadjuvant therapy	6/45 (13%)	6/50 (12%)	ns
Mean age (years)	67,4 (56-75)	66,8 (48-75)	ns
Clinical stage	3T1c – 1T2b – 2T2c – 19T3a – 20T3b	3T2a – 6T2b – 5T2c – 25T3a – 7T3b	ns
Mean PSA at diagnosis	27.26 ng/ml (2.03-63.9)	27,5 ng/ml (6,9-169)	ns
Bioptic GS	7,73 (4-9)	7,8 (5-9)	ns
Mean operative time (min)	237	185	<0.0001
Mean hospital stay (days)	4,5	4,5	ns
pT2	3pT2a - 3pT2b - 9pT2c	2pT2b -	<0.0001
pT3a	5/45	21/50	<0.0001
pT3b	20/45	19/50	ns
pT4	5/45	8/50	ns
Mean GS	8,1 (6-10)	7,64 (5-10)	ns
Positive margins	26/45 (57 %)	30/50 (60%)	ns
Anastomosis stricture	4/45 (8%)	8/50 (16%)	<0.0001

Conclusions: IORT during RP is a feasible and safe procedure, with a similar complication rate compared to RP and ART. Therefore IORT can be proposed as a treatment option for patients with locally advanced PCa. Longer follow-up is needed to assess long-term toxicity and local tumour control with IORT.

677 DO PATIENTS TREATED WITH RADICAL PROSTATECTOMY FOR LOCALLY ADVANCED PROSTATE CANCER AND PSA >50 MG/ML HAVE A WORSE PROGNOSIS THAN PATIENTS WITH PSA>20 MG/ML?

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Introduction & Objectives: Aim of this study was to compare the oncological outcomes of patients with clinically locally advanced prostate cancer (PCa) and

prostate specific antigen (PSA) 20-50 ng/ml and >50 ng/ml who underwent radical prostatectomy (RP) and pelvic lymphadenectomy (PNLD) at our institutions.
Materials & Methods: We performed a retrospective review of patients with clinically locally advanced PCa and PSA values >20 ng/ml treated with RP between 1999 and 2005 at our centre. Overall (OS), cancer specific (CSS), clinical progression free (CPFS), and biochemical progression free survival (BPFS) of patients with PSA 20-50 ng/ml (group A) were compared with those of patients who had initial PSA values >50 ng/ml (group B). Biochemical recurrence was defined as a double rise in PSA levels over 0.2 ng/ml after RP. Adjuvant or salvage radiotherapy (RT) or hormonal therapy (HT) were indicated according to institutional protocols. OS, CSS, CPFS and BPFS were calculated for the entire cohort and select subgroups using the Kaplan-Meier method with log rank test and Cox multivariate analysis.
Results: Mean age was 66 years (range IQR 61,8-71) with no significant differences between group A and B. Mean PSA was 30,4 ng/ml (range IQR 24,4-45). No differences between the two groups were observed for pathological stage, positive surgical margins and lymph node involvement. Mean pathological gleason score was significantly higher for group B (p=0.005). Mean follow-up was 65,3 months (range IQR 46,0–96,5). Table 1 describes OS, CSS and BRFS at 5 and 10 years for Group A and B. Only BRFS was significantly higher for group A vs. group B.

Table1

	Group A		Group B		p
	5-y. survival	10-y. survival	5-y. survival	10-y. survival	
OSS	86%	71%	83%	63%	0,65
CSS	92%	92%	89%	79%	0,67
BRFS	63%	58%	20%	20%	0,012

Conclusions: RP provided good results in cT3-4 disease. PSA value at diagnosis in our series could not discriminate OSS and CSS, while BRFS was lower for patients with a PSA>50 ng/ml. This study confirms that RP should be considered as the first step in a multimodality approach for locally advanced PC independently on PSA value at diagnosis.

678 THE OUTCOMES OF RADICAL PROSTATECTOMY MONOTHERAPY IN HIGH-RISK PROSTATE CANCER

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Introduction & Objectives: Controversy exists regarding the optimal treatment for patients with clinical high risk prostate cancer (PCa). Recent retrospective series have shown good cancer control when patients are treated with surgery as part of a multimodality approach, especially when specimen confined at pathological assessment. We aimed to investigate the cancer specific survival (CSS) of patients who underwent surgery alone without adjuvant treatment in a multicenter radical prostatectomy (RP) database of patients with high-risk localized PCa.
Materials & Methods: The study included 1584 patients with pre-operative high risk prostate cancer (PSA>20 ng/ml or cT3-4 or biopsy Gleason 8-10) treated with RP and pelvic LND at 7 tertiary referral centers between 1987 and 2009. Patients receiving neo-adjuvant or adjuvant (within 3 months) treatment were excluded from the analysis. Specimen confined disease was defined as pT2-T3a, N0 with negative surgical margins. Biochemical failure (BF) was defined as PSA>0.2 ng/ml on 2 occasions. Salvage therapy was administered according to institutional protocols. The Kaplan-Meier method with Log Rank test was used for the outcome analysis.
Results: 612 patients (38.6%) who underwent RP did not receive any neo-adjuvant or adjuvant therapy. 206 patients were excluded because details on salvage treatment were missing. In total, 406 patients (25.6%) were included in the analysis. Mean age at surgery was 65.2 yrs (median 66 yrs; range 46-79). Mean pre-operative PSA was 23.8 ng/ml (median 21.4 ng/ml; range 1-192 ng/ml). Final Gleason sum was 2-6, 7 and 8-10 in 46, 37 and 17%, respectively. Pathological stage was T2, T3a and >T3a in 43.8%, 37.6% and 18.5%, respectively. Margins were positive in 24.4%, and lymph nodes were positive in 6.2%. Salvage RT and HT were delivered to 10.8 and 12.9%, respectively. Overall, 273/406 (67.2%) patients in had specimen confined PCa. Interestingly, those patients had an excellent CSS compared to those without specimen confined PCa (10-year CSS 97.1% vs. 87.1%, p=0.02). They were also less likely to receive salvage RT (8.0 vs. 19.2%, p=0.14) and HT (5.1 vs. 28.8%, p<0.0001). Furthermore, patients who experienced BR within 24 months of surgery (n=78, 19.2%) fared significantly worse compared to patients who experienced BR beyond 24 months (n=47, 11.6%) (10-year CSS 77.2% vs. 100%, p<0.0001).
Conclusions: In this selected group of high-risk patients treated with RP and pelvic LND who received no (neo-) adjuvant therapy, CSS survival was excellent. Patients with pT2-3a, N0, R0 PCa and biochemical recurrence >2 yrs had a negligible risk of cancer related death.

679 ONCOLOGICAL OUTCOMES AND PROGNOSTIC FACTORS AFTER RADICAL PROSTATECTOMY IN T3A PROSTATE CANCER: A MULTI-CENTER EXPERIENCE

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Introduction & Objectives: Surgical management of locally advanced Prostate cancer is gradually being accepted by the urological community. However, the evidence for this is mainly based on rather small surgical series in highly selected patients. The objective of this study is to present the oncologic outcomes and determine prognostic factors in cancer specific survival (CSS) and overall survival (OS) in the largest multicenter series of cT3a prostate cancer to date.
Materials & Methods: Between 1987 and 2009, 888 patients with clinical T3a prostate cancer underwent RP and bilateral pelvic LND in 8 European tertiary referral centers. All patients had no evidence of nodal disease or distant metastasis on both contrast-enhanced computed tomography of the pelvis and bone scan. The last PSA value obtained prior to prostate biopsies was used in the analysis. Kaplan–Meier analysis was used to calculate CSS and OS. The uni- and multivariate Cox proportional hazard analysis were used to determine the predictive power of clinical and pathological variables in CSS and OS.
Results: Mean follow-up was 64.6 months (range 1 to 206). The mean pre-operative PSA was 29.2 ng/ml (range 0.5 to 1710). Median final Gleason score was 7 (range 3 to 10). One hundred and seventy-four patients (19.6%) were confirmed with organ confined disease (pT2); 625 (70.4%) were pT3 including 346 (39.0%) with extraprostatic extension only (pT3a) and 279 (31.4%) with seminal vesicle invasion (pT3b); 89 (10.0%) had adjacent structure invasion (pT4). Two hundred and thirteen patients (24.0%) had lymph node involvement. Four hundred and eleven patients (46.3%) had positive surgical margins. Adjuvant therapy was administered to 52.5% (9.8% radiotherapy, 42.7% hormonal therapy). At 5- and 10-year follow-up, CSS was 94.8% and 89.5 and OS was 89.5% and 71.7%, respectively. Multivariate Cox proportional hazard analysis is displayed in the table below.

Survival	Covariate	Univariate analysis			Multivariate analysis		
		HR	95% CI	p value	HR	95% CI	p value
CSS	preoperative PSA	1.001	0.998-1.004	0.384	0.995	0.986-1.004	0.285
	Final Gleason score	1.584	1.246-2.012	<0.001	1.300	1.001-1.689	0.050
	Pathological stage	2.567	1.835-3.591	<0.001	1.954	1.298-2.943	0.001
	Margin	3.713	1.852-7.444	<0.001	2.290	1.114-4.708	0.025
	Node	4.613	2.619-8.125	<0.001	2.218	1.155-4.258	0.017
OS	preoperative PSA	1.001	0.998-1.003	0.811	0.995	0.988-1.001	0.125
	Final Gleason score	1.230	1.064-1.422	0.005	1.100	0.942-1.285	0.232
	Pathological stage	1.547	1.277-1.874	<0.001	1.299	1.024-1.646	0.032
	Margin	1.933	1.340-2.789	<0.001	1.563	1.067-2.292	0.023
	Node	2.388	1.671-3.413	<0.001	1.869	1.228-2.844	0.004

Conclusions: RP is a valuable treatment option for cT3a prostate cancer, with a 10-year CSS of 89.5%. However, half of the patients might need adjuvant treatment. Margin status, final Gleason score, pathological stage and nodal status were significant predictors of CSS.

680 INTERMEDIATE-TERM ONCOLOGICAL OUTCOME IN MEN WITH CLINICAL T3 PROSTATE CANCER: ANTEGRADE RADICAL PROSTATECTOMY VERSUS EXTERNAL BEAM RADIATION THERAPY

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Introduction & Objectives: The aim of this study is to evaluate intermediate-term oncological outcomes of antegrade radical prostatectomy with intended wide