Background: Testicular tumours are uncommon but they represent an important group of malignancies in young men. Most patients with seminoma are affected by stage I disease. Adjuvant treatment options for stage I seminoma include postoperative para-aortic nodal irradiation, adjuvant chemotherapy or surveillance. Radiotherapy has been the standard of treatment for the last 50-60 years. Nowadays, surveillance is considered a valid policy since it provides optimal outcomes. Nevertheless, it has not often been adopted because the cost of follow-up is higher and there is concern regarding patient compliance (1). Moreover some authors showed that some conditions, such as tumour size >4 cm and rete testis invasion, are predictors of relapse (1-3). This report describes a case of stage I seminoma with rete testis invasion treated with surgery, which relapsed after two years and was treated with salvage chemotherapy and radiotherapy.

Case Report: A 40-year-old man with stage I pure seminoma infiltrating rete testis was treated with radical left orchiectomy in October 2006. No adjuvant therapy was performed because the patient strongly refused adjuvant treatment and missed the follow-up program. Because of severe abdominal pain, in July 2008, he underwent a chest and abdomen computed tomography (CT) which showed voluminous para-aortic adenopathic conglomerates starting from the proximal retroperitoneum and reaching the pelvis with compression and dislocation of vessels. Chemotherapy was performed using cisplatin, etoposide and bleomycin. A second CT followed chemotherapy, pointing to a partial response. Radiotherapy was delivered including para-aortic and ipsilateral iliac nodes with a total dose of 36 Gy (1.8 per fraction) and a boost dose of 3.6 Gy (1.8 per fraction) to the macroscopic residual nodes.

Results: Compliance to treatments was good. No acute and late toxicity was observed in relation to radiotherapy or chemotherapy, except for a mild nausea. A thorax and abdomen CT and a positron-emission tomography (PET) were performed two and five months after the end of radiotherapy, respectively: both of them showed a stable nodal disease. The latest CT, in September 2009, pointed to a complete response to treatment. The following PET, in January 2010, confirmed the absence of evident disease, being completely negative.

Conclusion: Patients with stage I seminoma of testis may be safely treated with para-aortic radiotherapy. Surveillance can be a convincing approach in many cases but adjuvant radiation therapy should always be recommended to patients with negative prognostic factors. When a strategy of surveillance is adopted, radiotherapy on para-aortic lymph nodes, which are the predominant site of failure, and chemotherapy are effective treatments at relapse. Seminoma proves to be highly sensitive to radiation therapy and chemotherapy.

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EXPRESSION OF SPANX PROTEINS IN LOW AND HIGH GLEASON SCORE PROSTATE CANCER

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Background: Previous genetic studies have investigated the expression of some susceptibility or family genes in prostate cancer (1). The SPANX multi-gene family (human sperm protein associated with the nucleus on the X chromosome) consists of a number of small (15-20 kDa) of very conserved cytoplasmic proteins. SPANX genes comprise five known members (SPANX-A1, -A2, -B, -C, and -D), encoding cancer/testis-specific antigens that are potential targets for cancer immunotherapy. These genes cluster on the X chromosome at Xq27. SPANX-A/D genes are expressed in normal testis and some melanoma cell lines; testis-specific expression of SPANX. Sequence alignments justify a subdivision of this gene family based on the absence (SPANX-A-like) or presence (SPANX-B) of a 18 base-pair sequence stretch in the open reading frame. The SPANX-B-like subfamily is represented by a single gene with the same name. The interest in the SPANX genes is mostly because they are specifically expressed in a variety of tumours as well as in male germ cells. Expression profile analysis showed that at least four of the family members (SPANX-A1, -A2, -B, and -D) are expressed in cancer cells, including highly metastatic

cell lines from melanomas, bladder carcinomas, myelomas, seminomas, embryonal carcinomas and melanoma.

Aim: To investigate the expression of the SPANX protein family in prostate cancer patients with low and high Gleason score.

Patients and Methods: Biopsies of 9 patients (aged 63-79 years, median 74 years) suffering from prostate adenocarcinoma with low, no aggressive phenotype (Gleason grade <7) (n=6) (and/or disease stage I-II) or high, aggressive phenotype (Gleason grade >8) (n=3) (and/or disease stage III-IV) were immunostained for SPANX, using the polyclonal serum against the common SPANX epitope TPTGDSDPQP developed in mouse cells (3). Four-micrometre sections obtained from ten normal skin samples and eight normal prostate tissues were used as normal controls.

Results: Four out of the nine biopsies (44.5%) had epithelial cells with morphological features of carcinoma which stained positive for SPANX protein. The vast majority of the cells (75-80%) were positive to SPANX with a diffuse cytoplasmic and perinuclear localization of the signal. All 4 patients had a low Gleason grade: 5 (3+2), 6 (3+3) and 7 (4+3) in 1, 1 and 2 patients, respectively. The remaining five cases showed no SPANX-positivity (percentage of positivity =0%). Prevalently, these patients had a high Gleason grade which was 8 (4+ 4) in 3 cases, 7 (3+4) in 1, and 6 (3+3) in the last one. It is noteworthy that SPANX protein expression in prostate cancer was dichotomic: *i.e.* only absent or present in an elevated number of cells.

Conclusion: These results showed that SPANX protein is expressed in about half of the prostate adenocarcinoma biopsies evaluated and that all had a low malignant phenotype. If these results are confirmed in a larger number of prostate cancer patients, SPANX protein expression may be used as a marker of low cancer malignancy.

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HYPOFRACTIONATION *VERSUS* CONVENTIONALLY FRACTIONATED RADIATION THERAPY FOR PROSTATE CANCER: OUR FIRST RESULTS

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Background: Recent analyses of clinical results have suggested that the fractionation sensitivity of prostate tumours is high and many hypofractionated protocols have been tested. In fact the alpha/beta ratio estimates for prostate cancer are much lower than the typical values for many other tumours and many data support a trend towards lower values for prostate tumour than for rectum and bladder. We performed a small randomized trial to compare the acute gastrointestinal (GI) and genitourinary (GU) toxicities of radiotherapy for localized prostate carcinoma using a hypofractionated *versus* a conventional schedule.

Patients and Methods: From September 2008 to July 2009, 40 patients with cT1-T2N0M0 prostate cancer were randomized to receive either a conventional or a hypofractionated radiation therapy with curative intent.

Patients were stratified according to stage, Gleason score and presenting prostate-specific antigen level: 9 patients were at low risk and 31 patients were at intermediate risk according to Partin classification. The latter received neoadjuvant hormonal therapy that started 2 months before the radiotherapy onset and continued during radiotherapy. Treatments were delivered using four to six coplanar 10-18 MV photon beams at a dose of 72-78 Gy in 36-39 fractions within 7-8 weeks or 64.8-70.2 Gy in 24-26 fractions within 5 weeks. Basing on standard linear-quadratic modeling, the hypofractionated protocol was designed to keep late complications constant in rectal tissues. Gastrointestinal (GI) and genitourinary (GU) toxicity were evaluated before radiation therapy, weekly during treatment and 1-2 months after its completion according to the RTOG/EORTC score system. Efficacy of radiotherapy, based on clinical, radiologic and prostate-specific antigen data, was also evaluated at baseline and afterwards (every 3 months for 2 years and every 6 months subsequently).

Results: All patients completed the whole course of radiotherapy without interruptions. Median follow-up was 6 (2-12) months. None of the patients experienced grade 3-4 toxicity. Grade 1 and grade 2 GI and GU toxicities occurred in 35% and 25%, and 60% and 30%, respectively, for the hypofractionation regimen. The corresponding figures were 25% and 10%, and 65% and 25% for the control group ($p>0.5$ for all comparisons). Two months after treatment, the majority of GI and GU symptoms were resolved. The results on late effects and tumour control estimates need a longer follow-up: At the moment they are theoretical, although based on the linear-quadratic modeling. According to the linear-quadratic formula in our study design, late toxicity is expected to be equivalent between the two treatment groups. Regarding tumour