therapy for patients with positive margins and an undetectable PSA.

MP-22.03
Estimate of rectal complications prior to external radiotherapy for prostate cancer
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Objective: External beam radiation therapy (EBRT) is one of the basic treatment methods in prostate cancer. The dose delivered to the rectum is the limiting factor to the total prostate dose. Our objective is to individualize the total dose to the prostate for a certain probability for rectal necrosis defined in each case.
Material and Methods: 3D-treatment planning systems (3D-TPS) provide dose volume histograms (DVH) of any organ. Based on these histograms and clinical parameters for the prostate and the rectum, the probabilities for tumour control (TCP) and for rectal necrosis (NTCP) have been estimated, for 15 patients. The patients studied were irradiated with three highly penetrating photon beams (15 or 23 MV); one anterior beam (1.5) and two lateral beams (1.0) with a 45° wedge. The lateral beams were tangential to their posterior side avoiding unnecessary rectum irradiarion. The total dose to the target volume (D) where the function f(D)=TCP(D)*(1-NTCP(D)) gets its maximum value reflects, in each case, the optimum target volume dose.
Results: The optimum target volume doses vary between 64 and 74 Gy. The average target volume dose (±1S.D.), that leads to a 3% probability for rectal necrosis is 65±2.5 Gy and that for a 5% probability, 68±3 Gy. These values are in agreement with those ones applied in clinical practice.
Conclusions: Estimate of the probability for rectal necrosis prior to prostate irradiation on a patient basis would allow i) to individualize the total dose to the prostate, which is important since rectal necrosis is a late effect of radiation and ii) apply suitable EBRT schemes in cases where increased prostate doses are required.

MP-22.04
Pilot study of PC-Spes2 in the treatment of hormone refractory prostate cancer (HRPC). Is hope renewed?
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Introduction: PC-SPES, a mixture of seven traditional Chinese herbs and *serenoa repens*, inhibits prostate cancer cell growth *in vitro* and can reduce PSA in patients with HRPC. First marketed in 1997, it was withdrawn in 2002 due to concerns over quality control and reported contamination with traces of warfarin, indomethacin and diethylstilboestrol. Active Botanicals Ltd has manufactured PCspes2 with strict, independently conducted quality control and has demonstrated no contaminants by HPLC, LCMS and GCMS. This compound has been investigated in a single-centre open pilot study.
Method: Eighteen patients with second or third-line HRPC, average age 72, median Gleason sum 8 (range 6-9), median PSA 135 (range 4-2870) and three consecutive monthly increases in PSA were studied.
Results: Eight patients withdrew during the first month because of significant diarrhoea (six of the first ten and only two of the last eight due to an improved dosing schedule). Seven out of ten patients at one month had a significant fall in their PSA or PSA velocity, which was continued in four out of five at three months and all three patients still on trial at six months. No serious adverse events or derangement of coagulation were observed.
Conclusion: PCspes2 offers renewed hope and another treatment option in this unfortunate group of patients.

MP-22.05
Nutrition therapy in hormone refractory prostate cancer patients with a polyamine reduced diet. The sooner the better?
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Introduction: Reducing polyamine uptake by selecting low polyamine-containing foodstuffs and reducing bacterial polyamine gut production has shown beneficial improvement of performance status and pain control in hormone refractory prostate cancer (HRPC) patients. Can reducing polyamine uptake, potentially improve cancer survival and retrospectively can initiating the diet in the early phases of HRPC have an impact on survival time?
Methods: 26 volunteers, age: 68±10 (range: 48-82) years with metastatic HRPC accepted nutrition therapy composed of a polyamine reduced diet (a list of ordinary foodstuffs was given to each patient who had to select low polyamine containing foods) and partial gut decontamination with oral nifuroxazide (750 mg daily, one week out of two). Prior time of hormonal treatment was 33±28 months. Time from HRPC to diet initiation was 11±9 months. WHO performance status, EORTC pain scale, body weight, haemoglobin (Hb) were regularly assessed. Statistics: Wilcoxon non-parametric test and Kaplan-Meier survival curves + Log-Rank. The local ethics committee approved the trial
Results: Mean diet observance is 20±15 (range: 4-64) months. Mild diarrhoae was observed in 8 patients. WHO performance status and EORTC pain scales were significantly improved respectively at 3 months (0.3±0.6 vs 0.6±0.8: p=0,05) and 6 months (0.4±1 vs 0.8±1, p=0.05) compared to initial values. Body weight and serum Hb were not impaired. Mean cancer specific survival times after HRPC and diet initiation are respectively 33±10 (range: 16-64) and 22±15 (range:4-64) months. 12 patients started the diet before a 9 months cut-off period (after HRPC) and 14 patients after 9 months. Median cancer specific survival time for these two groups of patients are respectively 40 and 34 months, p=0.04.
Conclusion: Nutrition therapy by reducing polyamine uptake can improve or maintain quality of life in HRPC cancer patients. Cancer specific survival seems favorably improved. Initiating the diet during the first 8 months after hormonal escape could also improve cancer specific survival.

MP-22.06
Phase I study of a novel polyamine free formula as nutrition therapy of metastatic hormone-refractory prostate cancer (HRPC) patients
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Introduction: Polyamine (PA) deprivation can be of clinical interest in HRPC patients. We have designed an industrially processed, canned liquid PA free formula. It's tolerance and side effects combined with intestinal decontamination (ID) has been assessed as well as it's clinical and biological effects.
Methods: Ten volunteers (mean age: 68 years) with metastatic HRPC were proposed for the treatment and ID (0,75 g/day oral Neomycin). The formula was given as only food intake three times a

day during the first two weeks, twice a day with 1 PA reduced meal for 3 weeks and then once a day with 2 PA reduced meals for 7 weeks. Pts then continued with a PA reduced ordinary diet. Toxicity, Performance and Pain status were assessed according to the WHO and EORTC scales. PSA, blood counts, ionograms, and hepatic transaminases were regularly evaluated. Bone and CT scans were performed before, during and at the end of the trial. The local ethics committee approved the trial

Results: One patient (pt) utterly disliked the taste of the formula and stopped at day 4. As only toxicity, 9 pts had 2 or 3 days of regressive mild diarrhoea during the first weeks. Performance status and pain score were improved for 5 pts, maintained for 3 and deteriorated for one. No significant differences in body weight, haemoglobin, serum proteins and ionograms were noted. Circulating lymphocytic levels were significantly improved in all patients. Four pts had a 20 to 40% PSA decline during the first 5 weeks, and one was stabilized. All other progressed. 5 pts had bone and CT scan stabilization and 4 progressed. Cancer specific survival after hormonal escape is 870 days (29 months). Cancer specific survival after the diet is 253 ± 185 (85-500) days (9 months).

Conclusion: This polyamine free formula is well tolerated and is beneficial for patients' quality of life and pain control. Its effect is dose dependent with a maximum improvement observed during the first 5 weeks of treatment when polyamine depletion is maximal. Objective stabilization is observed in half of the pts. PSA decline can also be observed.

MP-22.07

Long-term androgen deprivation and cognitive function in men with prostate cancer

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Introduction: There is evidence that testosterone plays an important role in the modulation of cognitive function. The objective of this study was further examining cognitive abilities in men who underwent long-term treatment with GnRH-agonistic analogues for prostate cancer.

Method: A total of 15 community-dwelling men (age: 57–76 years) receiving adjuvant therapy with GnRH-agonistic analogues for 3.4 to 8.1 years after an intent of curative treatment of prostate cancer were enrolled in this study and were compared with men of the same age and educational level with no cancer. At time of cognitive assessments all patients were asymptomatic and free of distant metastases. Circulating testosterone was in the castrate range and PSA levels were < 0.05 ng/ml. Cognitive evaluations included visual/verbal short and long-term memory, visual/verbal working memory, spatial memory, attention and visuo-motor speed using the Wechsler Memory Scale Revised (WMS-R) and the Nuernberger Altersinventar (NAI) test. The Leistungspruefsystem 50+ analyzed verbal factor, reasoning, word fluency, spatial thinking, closure and mental rotation. Visuo-constructive abilities were tested by the Hamburger-Wechsler-Intelligenztest-Revision (German translation of the WIS-R). Demented persons were excluded by prior mini-mental state examination (MMSE); age and education as well as depression (Beck's depression inventory), anxiety (state and trade anxiety inventory) and quality of life (WHO-QOL-Bref) were evaluated. The SPSS statistical software systems were used for all calculations.

Results: Our data revealed evidence of deficiencies in verbal recognition, visual recall, spatial memory, logical memory and social relationship after long-term medical castration. No deficiencies were found in verbal factor, mental rotation, closure, visuo-motor speed, attention, verbal and visual short-term memory, reasoning, word fluency, spatial thinking and visuo-constructive abilities.

Conclusion: Also preliminary, our findings support the assumption of adverse impacts of long-term castration on selective domains of cognitive function in men. These findings call for possible treatment alternatives such as intermittent androgen blockade or monotherapy with non-steroidal antiandrogens, like bicalutamide.

MP-22.08

Phase II study of two doses of ketoconazole (keto) in hormone refractory prostate cancer (HRPC)

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Purpose: To assess the efficacy and safety of two doses of keto, 600mg (LD) and 1200mg (HD) daily, in patients with HRPC.

Patients and Methods: Forty patients (pts), 20 in each arm, no randomized, were studied. All of them had progressed to a median of 3 (range: 2-4) prior treatments. Median age was 71 years (53-84), median PSA was 103 (range: 8.8-1378), with a median performance status of 90% (range: 70-90%). PSA response was defined as a >50% fall in PSA from baseline, confirmed by a second PSA value 4 or more weeks later. Patients with measurable soft tissue disease met traditional guidelines for tumour responses. Progression was defined by objective disease progression or PSA increase of >50% above nadir or >25% above baseline.

Results: Fifteen out of 38 evaluable pts (2 pts too early)-39.5%; 95%CI:21%-54%-showed a PSA-response, 5 of which had a >75% decline in PSA levels. The PSA response rate for the 19 pts treated with HD was 47%, and for the 19 pts treated with LD was 26% (p =0.2). We observed objective responses in 3 of 7 pts (42%) with measurable soft tissue disease (2 with HD and 1 with LD). With a median follow up of 40 weeks (3-117 ws) 34 pts have progressed and 6 are still in response. The median time to progression was 11 weeks and 18 weeks (p<0.035) for pts treated with LD and HD keto, respectively. Toxicity was mild at the studied doses. Of note, 3 of 36 patients (8.3%) discontinued therapy because of gastrointestinal side-effects (1 treated with HD and 2 with LD). In addition, 2 pts treated with HD keto required dose-reduction because of dyspepsia. No hepatic damage was seen.

Conclusions: Ketoconazol is an effective and well-tolerated treatment in pts with HRPC. This study suggest that a daily dose of 1200 mg may be more effective, if tolerated, than lower doses.

MP-22.09

Complete remission in metastatic prostate cancer after combined local and systemic therapy

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Introduction: Complete remission > 5 years, according to oncological definition, of primary metastatic prostate cancer is extremly rare, spontaneous remission is not reported. Progression after hormonal ablation, as standard treatment, is immanent and seems to depend on aggressiveness of the primary tumor. We analysed all our cases for patients with complete cancer remission (PSA=0 + negative bonescan + symptom free) after combined treatment with high intensity focused ultrasound (HIFU) by Ablatherm® plus per-