Chairpersons' Introduction

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Successful efforts in the past, for example, the introduction of prostate specific antigen (PSA) and PSA-screening, led to the diagnosis of prostate cancer at an earlier stage. Based on different criteria there are now clearly defined preferred treatment options for "low risk" (cT < 2a, Gleason score <7, PSA < 10 ng/mL) and "intermediate risk" patients (cT2b, Gleason score 7, PSA 10–20 ng/mL): radical prostatectomy and radical radiation therapy have a comparable 10 year outcome regarding biochemical progression-free survival and overall survival. Also, in the case of "high risk" prostate cancer (cT3, Gleason score 8–10, PSA > 20 ng/mL), the combination of hormonal treatment and radical radiation therapy with doses up to 78 Gy and, in selected cases, radical prostatectomy with or without adjuvant radiotherapy are standard procedures. However, in patients with good prognostic factors, active surveillance is an additional option. Most patients with low risk prostate cancer don't die from their malignant disease.

However, despite these standard treatment procedures with curative intent, a lot of men, often at a younger age, will develop a biochemical relapse after the initial treatment of their malignant disease. For example, following radical prostatectomy, about 50–75% of men with pT3-tumours with or without positive surgical margins will develop a biochemical progression within 5 years, measured by PSA levels. Even in the case of pT2-tumours, this is the case in up to 20% of these patients, especially if risk factors like a high pre-therapeutic PSA or a high Gleason score are present (8–10).

In these men with recurrent, minimal, frequently undetectable disease, there are different treatment options based on certain risk factors; for example, a "wait and see" policy, salvage radiation therapy, or, at a later stage, hormonal treatment. It is well-established that salvage radiotherapy following radical prostatectomy with a total dose of 66 Gy is sufficient to destroy a local microscopic tumour volume at an early stage of biochemical progression.

About 60% of these men treated with salvage radiotherapy will develop a decrease of PSA when starting with radiation therapy at a PSA level of below 1.0 ng/mL. More importantly, between 40 and 50% of these men will achieve an undetectable PSA after salvage radiotherapy again, thus providing "a second chance of cure". On the other hand, patients with good prognostic factors like a long PSA-doubling time can sufficiently be followed with a "wait and see" strategy. The major point of interest is the relatively low rate of severe side-effects following salvage radiation therapy. The rate of severe morbidity has decreased significantly over past years due to better radiation techniques like 3D-treatment planning, intensity modulated radiotherapy (IMRT) and image guided radiotherapy (IGRT).

On the other hand, as the results of radical prostatectomy and radical radiation therapy are comparable, the same number of biochemical recurrences will also occur after radical radiation therapy with or without hormonal treatment. Comparable with the first scenario, there are again several treatment options. The first step in the work up of these patients is to demonstrate that there is indeed only a local recurrence, histologically proven by biopsies. This is essential because after radiotherapy a PSA "bounce" is seen in about 20% of patients and this does not reflect tumour recurrence/progression. For selected patients, normally younger men with good prognostic factors with a chance of obtaining negative surgical margins after radical salvage prostatectomy, this approach is an appropriate method in the hands of experienced surgeons. During the past years, the morbidity of this procedure has clearly improved and seems now to have an acceptable rate of severe side-effects such as urinary incontinence and rectal lesions. Moreover, there is an increasing debate concerning more experimental therapies for local recurrence such as cryosurgery or high intensity focused ultrasound (HIFU). However, a high rate of possible severe side-effects has to be taken into account. Therefore, the treatment of biochemical relapse following radiation treatment is

still controversial, but clearly the patients opting for salvage treatment should have a good life expectancy and a good performance status; however, it is still a matter of discussion between the doctor and the patient to decide which treatment is the best in each individual case.

In case of relapse, hormonal treatment (androgen deprivation) is widely applied after primary or secondary treatment failure. However, side-effects (osteoporosis, anaemia, cardiovascular diseases, metabolic syndrome) of long-term hormonal therapy are frequently recognised. There is a wide range of therapeutic options dealing with hormonal treatment like "early versus deferred treatment", "intermittent versus continuous treatment", "LHRH-analogues versus antiandrogen monotherapy" or "combined androgen blockade". Using antiandrogen monotherapy in a rising PSA situation seems an appropriate alternative to LHRH-analogues including intermittent androgen blockade. Combined androgen blockade might be considered second line hormonal manipulation after first line hormonal treatment has failed.

In case of progression under hormonal therapy (castration resistant prostate cancer – CRPC), chemotherapy is a valid option. Until recently, there was no effective chemotherapy for patients with CRPC. The introduction of docetaxel has changed the treatment for these patients significantly. docetaxel based therapy is now the standard treatment for men with CRPC, because phase 3 trials have demonstrated statistically significant improvements in overall survival, symptom reduction and associated quality of life. Novel systemic treatment options are being explored, e.g. combination treatments with docetaxel and new agents active in prostate cancer. Since several factors including PSA, PSA-doubling-time, pain, number of metastatic sites and measurable disease have been identified as independent prognostic factors, these can be used to optimise treatment management in these men. The identification of these factors allows the stratification of patients into different risk groups and this can help to determine which treatment is optimal for which patient, also taking into account the side effects of the treatment.

This symposium focuses on the role of treatment for local progression after radiotherapy, the interdisciplinary approach for PSA-increase after radical prostatectomy, several forms and combinations of hormonal treatment for progression after first and second failures and on the role of chemotherapy and new agents for castrate resistant prostate cancer. This symposium provides guidelines on how to treat these groups of patients and how to minimise side-effects by choosing the best treatment modality for the individual patient.

Conflict of interest statement

None declared.