Methods for prognosis of prostate cancer

Background
Almost 1 million prostate cancer patients are diagnosed every year worldwide, being the 6th leading cause of cancer death in males. Prostate specific antigen (PSA) is the only routinely implemented clinical biomarker for prostate cancer detection that together with the so called Gleason Score (which allow to classify patients based on cancer aggressiveness) is the only tool that physician have on their hands to personalized therapy. Indeed, 10-25% of patients stratified with this methods fail to respond to first line therapies (total prostatectomy or radiotherapy) presenting poor prognosis and high morbidity.
Current Options. Options available to overcome PSA limitations in development are:
- Early prostate cancer antigen (EPCA) IHC test.
- Serum-based ELISA of EPCA to assist in evaluation of prostate biopsies for use by pathology laboratories.
- The cell cycle progression gene test performed on solid tissue.
- Screen 12 cancer-related genes only in biopsy tissues.
- RNA-based biomarkers in radical prostatectomy tissues.
- Exosome Diagnostic developing a RNA-based diagnostics for blood and urine tests.

Unmet Medical Need
Available alternative present limitation in term of applicability and type of tissue to be analyzed, therefore, it is of key importance to define new biomarkers that can inform about the risk or recurrence to first line therapies in order to establish novel therapeutic initiatives that reduce the rate of recurrence and increase survival.

Technology
MetaboMARKER consist on the analysis and evaluation of expression levels of a set of genes (singularly and in combination) involved in the cellular regulation of metabolism. The expression of these genes serves at prognostic finger print. The technology have been developed by using targeted approaches, biological assays to proof the causality of the signature and a genetic algorithm to optimize its potency.

Application
- To predict failure to respond to prostatectomy (resulting in recurrence or metastasis) and to select patients that would benefit from additional therapeutic strategies (e.g. androgen deprivation or chemotherapy) in the adjuvant setting.
- To non-invasively screen for early prostate cancer lesions

Advantages
- Versatile use in solid tissues (e.g. biopsy) and possibly body fluids (blood, urine).
- Providing to clinician a tool to predict response to therapy for a personalized therapeutic choice.

Patent Status.
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