Urinary Proteome Analysis for Clinical Applications

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The impact of clinical proteomics to clinical routine is modest compared to the high expectations formulated by the personalized medicine community in the past. However, most available studies suffer from flawed designs rather than from technical limitations. This talk will introduce the main technological approaches taken, their advantages and disadvantages. From choosing the appropriate specimen over clinical design aspects to appropriate data processing and statistics and, the different challenges associated with clinical proteomics will be discussed. Furthermore, several examples of the successful application of clinical proteomics in the field of discovery and validation of biomarkers will be introduced. These examples suggest careful validation of novel biomarkers, appropriate study designs using blinded cohorts enrolled from appropriate target populations and standardization of the techniques as key elements of successful studies. These prerequisites are essential for turning the old promise of a personalized medicine approach into a new reality to optimize patients' diagnostic and therapeutic care.