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Patient stratification and precision medicine in pancreatic cancer: A gene blood-signature for gemcitabine treatment

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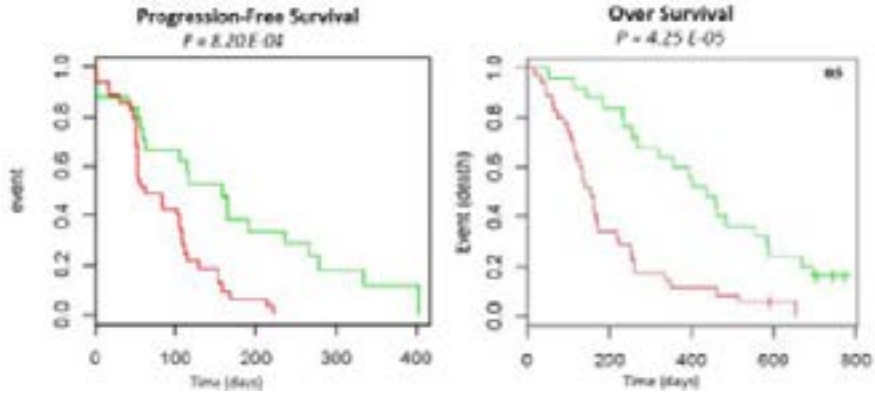
Pancreatic cancer (PC) kills 98% of those it afflicts and is one of the most lethal cancers worldwide: patients diagnosed with PC have a poor prognosis partly because the cancer usually causes no symptoms early on, leading to metastatic disease at the time of diagnosis. The high mortality rate is partly due to the difficulty to diagnose and due to the lack of stratified patients to effective treatments. The capability of biomarkers to improve treatment and to reduce healthcare costs is potentially greater than in any other area of current medical research. Otherwise, healthcare stakeholders are facing two major issues: the reduction of global healthcare system expenditures and the growing need to improve the efficiency of therapies. Diagnostics are one of the most efficient solutions to respond to these needs by supporting physicians in the selection of the best treatment. In without a priori analysis and from a whole blood collection, from clinical trial phase III and based on a high throughput analysis of NGS data using the proprietary ACOBIOM genomics platform (Big Data system dedicated to Biomarker discovery), we identified a set of genes in a pre-discovery phase. Using Real-Time PCR, candidate genes were selected for test significance and a Gene Expression-based Score was established. ACOBIOM developed a new *In Vitro* diagnostic for patient stratification based on molecular analysis. The GemciTest® assay is an IVD associated with gemcitabine drug in PC treatment. GemciTest® is currently a prototype in an operational environment through a 15 Clinician Peer Network. This IVD is a quantitative real-time PCR assay and is intended to quantitatively aid in the determination of high probability Progression- Free Survival and Overall Survival rates of patients diagnosed with pancreatic cancer and treated with gemcitabine as first-line therapy. In this context, ACOBIOM is always looking for new partnerships, public or private, the right way to really open the opportunity to develop safe/better solution in PC for the patient (Bench-to-Bedside), assisting physicians in routine patient care.



Recent Publications

1. Carlini F et al. (2017) Bronchial epithelial cells from asthmatic patients display less functional HLA-G isoform expression. Front. Immunol. 8:6.
2. Deplanque G et al. (2015) A randomized, placebo-controlled phase III trial of masitinib plus gemcitabine in the treatment of advanced pancreatic cancer. Ann Oncol. 26(6):1194-1200.
3. Assou S et al. (2013) MicroRNAs: new candidates for the regulation of the human cumulus-oocyte complex. Hum. Reprod. 28(11):3038-3049.
4. Bou Samra E et al. (2012) New prognostic markers, determined using gene expression analyses, reveal two distinct subtypes of chronic myelomonocytic leukaemia patients. Br. J Haematol. 157(3):347-356.
5. Cheval L et al. (2011) Atlas of gene expression in the mouse kidney: new features of glomerular parietal cells. Physiol Genomics. 43(3):161-173.

Biography

David Piquemal pursued PhD in Molecular Biology from the Institute of Human Genomic in Montpellier, France. He is the Co-founder and Scientific Director of ACOBIOM Company. His research area of interest includes: Molecular Biology, Personalized Medicine, Translational Medicine and Bioinformatics. He was Co-founder and Member of The Computational Biology Institute (IBC, set-up in 2012, of the steering committee) which aims at the development of innovative methods and software to analyse, integrate and contextualize large-scale biological data in the fields of health, agronomy and environment. He has several publications to his credit.

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