

P028 Evaluating potential biomarkers from profiling protein and gene expression changes during chemotherapeutic induction using time-of-flight mass spectrometry and microarray

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Gene Chip assays had been previously used to profile gene expression changes that occurred during the treatment of patients with Acute Myeloid Leukaemia. In adult patients with AML the possibility of therapy-induced leukaemia associated with the chemotherapeutic use of Topoisomerase II inhibitors has lead to the study of the MLL gene and how it is linked with the apoptosis mechanism.

With this investigation we study the differences observed using two the techniques of GeneChip microarray to follow the occurrence of possible mutated forms of the MLL gene and then to evaluate the possible biomarkers by profiling protein expression changes arising from the exposure to the inhibition by time-of-flight mass spectrometry (Tof-MS)

The serum samples from patients before and after therapy were analysed and intensities of the biomarker peaks were correlated with dosage. The proteins were prepared by 2-D gel and then run on the Tof-MS. The evaluated peaks of interest were matched on completion of the therapy. This gave an insight into which of the multiple peaks could be used as biomarkers. The remaining serum sample was run using the microarray system to identify the gene mutation and the sequence conformation.