

15 STRS LOCI AND SEX SPECIFIC AMELOGENIN ANALYSIS OF BLOOD SAMPLES FROM FEMALE PATIENTS RECEIVES MASSIVE BLOOD TRANSFUSION USING ABI 310 GENETIC ANALYZER

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ABSTRACT

In forensic context effect of blood transfusion on DNA profiles of an individual is an important issue. In the present study we have investigated the effect of massive blood transfusion, up to 75% blood loss and 65% blood volume replacement of less than 26h old unfiltered whole male blood having large number of leucocytes, in seven female subjects up to 20 KG body weight by PCR based assay on serial post transfusion blood samples. The Amp FI STR[®] Identifier[®] PCR Amplification Kit, Applied Biosystem, having primer pair to D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWA, TPOX, D18S51, D5S818, FGA and Amelogenin loci were used for the PCR amplification of 15 STRs and sex specific Amelogenin. Separation and Electropherograms pattern of alleles of amplified multiplex products from pre and post transfusion of seven female recipients and their corresponding donors were generated by ABI PRISM[®] 310 Genetic analyzer and studied. The DNA profile of Pre-and Post Transfusion of all seven female recipients were found to be consistent with no evidence of the male donor genetic material. It is demonstrated that the currently available PCR based STR and Sex specific Amelogenin loci DNA profiling technique is reliable and informative which can be used in forensic science for paternity and identity purposes in situation of massive transfusion of unfiltered whole male blood (<26h old) to female recipient up to 60 h post transfusion.

KEYWORDS: 15 STRs loci, ABI 310 Genetic Analyzer, Unfiltered Whole Blood, Massive Transfusion, DNA Profiling, Microchimerism