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SHORT TANDEM REPEAT (STRS) AND SEX SPECIFIC AMELOGENIN ANALYSIS OF BLOOD SAMPLES FROM NEUROSURGICAL FEMALE PATIENTS RECEIVED MASSIVE BLOOD TRANSFUSION

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Effect of blood transfusion on DNA profiles of an individual is an important issue in the forensic context. In the present study, the effects of massive blood transfusion of unfiltered whole male blood in seven female subjects up to 20KG body weight were investigated by PCR-based assays on serial post-transfusion blood samples. PCR analysis of specific short tandem repeat (STR) primer pair to CSF1PO, TPOX, TH01, F13A01, FESFPS, vWA and sex specific Amelogenin loci for banding pattern of alleles generated from the pre- and post-transfusion of seven female recipients and their corresponding donors were studied. The Amplified Multiplex products were separated in a 4% polyacrylamide denaturing gel using a BRL SA32 sequencing gel electrophoresis apparatus. Detection of the STRs and sex linked Amelogenin was performed by using silver staining. Pre- and post-transfusion DNA profiles of all the seven female recipients were found to be consistent with no evidence of the male donor genetic material. It is concluded that currently used PCR-based STRs and sex specific Amelogenin loci DNA profiling techniques in forensic science are reliable and informative for paternity and identity purposes in situations of massive transfusion of unfiltered whole male blood (> 72 h old) to female recipient up to 24 h post-transfusion.