A COMPARATIVE STUDY OF CARTILAGE AND PHALANGE FROM HALLUX AS IMPORTANT KINDS OF SAMPLES FOR DNA TYPING IN DISASTER VICTIM IDENTIFICATION (DVI)

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In mass fatality incidents, the quality and kind of samples for DNA typing will play a crucial role in the identification of the victims. The choice of samples for DNA typing depends on the conditions of the bodies and on many factors related to the incident. The aim of this study is to demonstrate that cartilage and phalange from hallux are important kinds of samples for DNA typing in disaster victim identification (DVI). In this study, we compared DNA yields and DNA profiles of twenty cartilage samples from knees with twenty bone samples (phalanges from hallux) collected from the same victims of the biggest natural disaster in Brazil in which there were 918 deaths. This mass fatality incident was due to floods and mudslides in the mountainous region of the State of Rio de Janeiro in Brazil in January 2011. Sample collection was performed with disposable equipment. Modified organic phenol-chloroform was used for DNA extraction. Plexor HY Kit (Promega) was used for real-time quantification and PowerPlex 16 and Fusion (Promega) and Identifiler Plus (Life Technologies) Kits were used for amplification. The results of the amount of DNA recovered from the samples and the quality of the STRs profiles obtained showed that cartilage and phalanges are excellent kinds of samples for DNA typing in disaster victim identification (DVI).