EXPRESSION OF E-SELECTIN AND ICAM-1 MRNA USING RT-PCR IN ANTEMORTEM AND POSTMORTEM INJURIES IN FORENSIC AUTOPSY CASES

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Antemortem injuries are generally injuries received before death while postmortem injuries are those which occur after death. Antemortem injuries may be a precipitating factor in cause of death or death itself. Postmortem injuries can cause confusion over time, pattern and cause of death, even if they are unrelated. As there are cases of misleading findings, this results in the difficulty in distinguishing antemortem injuries from postmortem, thus leading to incorrect assessment of time since death and also the wrong cause of death.

It has been studied immunohistochemical markers for distinguishing antemortem from postmortem injuries. Recently, the studies in death investigations have suggested the relative quantification of mRNA transcripts can be applied using biological molecular markers using real-time reverse transcription-polymerase chain reaction. It has been demonstrated that collagens, cytokines, growth factors, extracellular matrices, and so on are useful markers for the determining wound vitality or age in forensic practice. The adhesion molecules of markers have previously been demonstrated to occur in the skin after injury with a short survival time.

In this study, E-selectin and intercellular adhesion molecules (ICAM-1) expression were investigated for comparing difference between antemortem and postmortem injuries. We tested 10 types of wound skin samples including stab wound, abrasion and laceration from 10 forensic autopsy cases and compared them with intact skin samples The relative mRNA expressions of E-selectin were relatively high in stab wound and abrasion in antemortem samples and that of ICAM-1 were relatively high in stab wound and laceration. Further studies using immunohistochemical and molecular biological method will be needed for distinguishing between antemortem and postmortem injuries.