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Key words: cholesterol,
lethal trauma, adrenal
glands

UDC: 81'42:616-091-051

CHOLESTEROL CONTENTS IN HUMAN ADRENAL TISSUE IN CASE OF DIFFERENT DURATION OF A LETHAL TRAUMA

ABSTRACT. Background. Among the systemic changes in trauma the primary importance has the activation of the hypothalamus-pituitary-adrenal system, and increase in hormones synthesis, such as glucocorticoids. Precursor for the synthesis of steroid hormones is the adrenal free cholesterol. **Objective.** To determine the quantitative cholesterol (free and membrane) content in adrenal tissue at different times after injury. **Methods.** Adrenal glands of people who died at different times after injury were divided into three groups: 1st – death immediately after the injury, 2nd – in a short period of time (from several to tens of minutes), and 3rd – after 1-2 hours. Cholesterol content was estimated after tissue homogenization with the help of petroleum ether. **Results.** It is determined that the amount of cholesterol in human adrenal tissue differs depending on duration of a lethal mechanical trauma. In comparison with a control group (those who died as a result of a sudden death) the cholesterol content in adrenal tissue of persons of the 1st and 3rd groups did not differ ($p>0,05$), but differs for the 2nd group ($p<0,001$). While comparing the cholesterol content in those who died as a result of a violent death it was revealed that it is different in persons of the 1st and 2nd groups ($p<0,01$), 1st and 3rd groups ($p<0,05$), and 2nd and 3rd groups ($p<0,001$). **Conclusion.** Obtained results could be used in criminalistics for determination the duration of trauma before death.

Received: 23.07.2013

Accepted: 14.09.2013

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Citation:

Bilyakov AM. [Cholesterol contents in human adrenal tissue in case of different duration of a lethal trauma]. *Morphologia*. 2013; 7(3):23-6. Ukrainian.

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