

ABSTRACT

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Title of Diploma Thesis: Impact of various fixation methods on bone marrow trepanobiopsies processing

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Background: The aim of this diploma thesis is to determinate whether the length of fixation influences the processing of bone marrow trepanobiopsies.

Methods: This study was performed on twelve bone marrow trepanobiopsy specimens fixed in 10% neutral buffered formalin (NBF). The samples were divided into two groups based on diagnosis. Three fixation lengths (24 hours, 48 hours, and more than 48 hours) were examined. The fixed samples were processed in the laboratory as standard, stained in a Shandon Varistain Gemini staining machine and handed over to a clinical pathologist for evaluation.

Results: Individual fixation lengths achieved the following laboratory technician/clinical pathologist scores: the 24-hour fixation score was 6.71/7.71, the 48-hour fixation score was 6.57/7.71, and the more than 48-hour fixation score was 7.42/8.42. In terms of division into groups, in group C, the 24-hour fixation is rated at 6/7.66, the 48-hour fixation at 6.33/7.66, and the more than 48-hour fixation at 8.33/9. In group D, the 24-hour fixation score was 7.25/7.75, the 48-hour fixation score was 6.75/7.75, and the more than 48-hour fixation score was 6.75/8.

Conclusions: The fixation length of more than 48 hours was found to be the most optimal. Another, relatively suitable length is the 24-hour fixation. The lowest rating was obtained by fixation for 48 hours, which is not recommended for bone marrow trepanobiopsies processing.

Keywords: fixation length, 10% neutral buffered formalin, bone marrow, trepanobiopsy, Hematoxylin and Eosin stain