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Supplementary Material

Management of the Procedural Pain Induced by Bone Marrow Biopsies: An Observational Study

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ABSTRACT

Introduction: Bone marrow biopsy is an investigation procedure in hematology which might lead to procedural pain. Therefore, our study aimed to assess procedural pain intensity and to identify factors associated with pain experience.

Methods: We performed an observational study of consecutive patients who underwent a bone marrow biopsy in a tertiary hospital hematology ward. The pain was assessed using a visual analogue scale (0-100 mm) before, during and after the procedure. We also collected data as premedication strategy, anxiety, physician's experience and the experience of a previous biopsy.

Results: Forty consecutive patients were recruited. The biopsies were mostly performed in a diagnosis purpose (45%). Thirty percent had local anesthesia alone and 70% had local anesthesia plus any other medication. The mean pain before the procedure was 9mm (SD=1.7) during 36mm (SD=2.7) and after 9.5mm (SD=1.0). No statistical difference has been shown between the different pain prophylaxis (p=0.622). The level of anxiety before the procedure was significantly correlated with the procedural pain experienced ($r^2=0.323$, $p=0.042$), while the length of the procedure and previous experience of the procedure were not.

Conclusion: This study suggests that bone marrow procedural pain can be improved and highlights several promising mitigation-strategies to address this issue.

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Appendix 1: Study’s Case report Form.

Case Report Form	Patient number:
<u>Patient’s sociodemographic characteristics:</u>	
Gender: <input type="checkbox"/> Female <input type="checkbox"/> Male Date of birth: __ _ / __ _ / __ _ Marital status: <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Widow <input type="checkbox"/> Divorced <input type="checkbox"/> Separated <input type="checkbox"/> Other: ____	
Diagnosis (for the hematologic disease): Date of the diagnosis: __ _ / __ _ / __ _ Stage: <input type="checkbox"/> Metastatic <input type="checkbox"/> Recurrent cancer <input type="checkbox"/> Locally advanced <input type="checkbox"/> Other: _____	
Does the patient have pain killers in its usual treatments? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, which treatments?	
Did the patient already had a bone marrow biopsy? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes :	
Please ask the patient to fill the further Visual analogue scale for the pain they experienced during the last bone marrow biopsy:	
No pain _____ Worst imaginable pain	
Did the patient experienced anxiety before the procedure? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, why?	
Please ask the patient to fill the Visual Analogue Scale for the anxiety they experienced before the procedure:	
No anxiety _____ Worst imaginable anxiety	
Please ask the patient to fill the Visual Analogue Scale for the pain they experience before the procedure (15 minutes before the start of the procedure):	
No pain _____ Worst imaginable pain	
Please ask the patient to fill the Visual Analogue Scale for the pain they experience at the time of bone-marrow aspiration:	
No pain _____ Worst imaginable pain	
Please ask the patient to fill the Visual Analogue Scale for the pain they experience 15 minutes after the end of the procedure:	
No pain _____ Worst imaginable pain	
What medications were given to the patient before and during the procedure to prevent pain?	