Nurse led ultrasound guided femoral nerve block in hip fracture patients – a study of task shifting

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Hip fracture is associated with acute distinct pain in the proximal part of the affected extremity. Patients who experience severe pain have a higher risk of delirium, as opposed to patients whose pain is adequately treated [1]. Further, delirium is shown to be an independent marker for increased mortality after hospital admission [2]. Therefore, optimizing acute pain assessment and management is important. An ultrasound-guided femoral nerve block performed in hip fracture patients is a valuable alternative to systemic opioid administration [1]. Ultrasound guidance allows for real-time evaluation of the spread of local anaesthetic, the quality of the spread of local anaesthetic, and can have favourable patient safety outcomes [5].

The World Health Organization [3] endorses a task shifting approach to make more efficient use of the available human resources for health. Recently, several examples of task shifting have been described, suggesting that properly trained registered nurses can provide as high-quality primary care as physicians [4] and can have favourable patient safety outcomes [5].

Our main hypothesis is that; a single shot ultrasound guided femoral nerve block performed by nurses in the emergency department compared to today’s practice will result in better pain relief first 120 minutes after admission. Therefore, in the emergency department at Vestfold Hospital Trust we are conducting a single center randomized controlled trial comparing standard of care with nurse led ultrasound guided femoral nerve block. In September 2019, we started the training of the nurses in the emergency department. The data collection for this randomized controlled trial started in February 2020 and is still including patients. The primary endpoint is to evaluate cumulative pain score during rest and during passive movement (until a maximum of 30-degree flexion in the hip) in patients with hip fracture during stay in the emergency department at 120 minutes after admission, thereby comparing nurse-led ultrasound-guided femoral nerve block, versus standard of care. We will also assess development of delirium and total use of opiates in both groups.

Except for the one-day training, none of the registered nurses have any previous experiences in performing ultrasound-guided femoral nerve block. Therefore, we also developed a questionnaire presented to the nurses immediately after completed procedure. The trained registered nurses scores how they visualized the anatomical structures, the quality of the spread of local anaesthetic, and if they experienced that the patients benefited from the procedure and if the procedure was easy or demanding.

This study has potential to point out a new direction for use of registered nurses and use of ultrasound in point of care interventions.

References