International Journal of Medical and Health Research
ISSN: 2454-9142
Received: 04-06-2019; Accepted: 05-07-2019
www.medicalsciencejournal.com
Volume 5; Issue 9; September 2019; Page No. 07-08

Rib fractures and nerve block: A 63 case study

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Abstract
To determine the importance of nerve block in rib fracture patients.
Methods: During the period July 2015- December 2016 a retrospective study took place. Sixty three patients diagnosed already with rib fractures underwent nerve bock by thoracic surgery department at General Hospital of Athens – Red Cross- Korgialenion Benakion, - Athens Greece.
Results: All 63 patients received nerve block and 43 of them received nerve block and Diclofenac injection. Post nerve block period (7 to 10 days) along with regularly analgesic-NSAID medication the recorded pain has been reduced to satisfactorily.
Conclusion: Provides satisfactory pain relief with low cost. It can combine with analgesic and ant inflammatory medication. Reduces also hospitalization.

Keywords: rib fractures, nerve block, xylocaine toxicity

Introduction
Rib fractures cause a lot of pain and are associated with quite a lot complications like traumatic pneumothorax, traumatic haemothorax, atelectasis, lung contusion and many times with longer hospitalization stay.

Objectives
To study the effectiveness of nerve block in pain in rib fractures patients.

Materials and Methods
During the period July 2015- December 2016 a retrospective study took place. Sixty three patients diagnosed already with rib fractures underwent nerve bock by thoracic surgery department at General Hospital of Athens – Red Cross- Korgialenion Benakion. All patients who underwent nerve block were asked upon questionnaire to estimate the gravity of the pain. (0- no pain, 1-2 minimal pain, 3-5 moderate pain, 6-8 severe pain, 9-10 maximum-insufferable pain). All patients who underwent nerve block had in the pain scale upon questionnaire above 5 grades. Xylocaine 10-15ml was used as local anaesthetic and was injected in the middle of the fractured rib.

Results
The population study of 63 patients were 41 male (65, 08%) and 22 female (34, 92%) age 20-83 years old, mean age 39 years old.Mechanism of injury: Car accident 38(60, 31%), Falls 16(25, 39%), Fight 9(14, 28%).Location of the injury was found in 35 patients on the right side and 28 on the left side. All patients who underwent nerve block the pain scale upon questionnaire was above 5.All 63 patients received nerve block and 43 of them received nerve block and Diclofenac injection. After a week of post nerve block along with regularly analgesic-NSAID medication the recorded pain has been reduced to minimum. No atelectasis found on the chest radiography. A male patient aged 54 presented as a follow up patient with a large pleural effusion. He underwent chest drain and his hospital stay was 3 days. To mention that 14 patients refused admission in the thoracic department post nerve block and as a follow up patient no complication was documented. Two patients after having nerve block felt unwell (toxicity at Xylocaine). One octogenarian patient with cancer, received iv fluids monitoring –observation for two hours. A female 72 years old received iv fluids monitoring –observation for three hours. Finally both patients discharge home with good postoperative recovery.

Discussions
Nerve block reduces pain and also in combination bupivacaine for nerve block long lasting offers efficacy [1, 5]. It is also very helpful and effective in treatment of Reno-ureteral colic by twelve intercostal nerve block with lidocaine versus intramuscular Diclophenac [2]. Diclophenac also can be given in combination with nerve block with excellent result. Combined usage of intercostal nerve block and tumescent anaesthesia is an effective anaesthesia technique for breast augmentation[3]. Addition of lidocaine to levobupivacaine reduces intralethal block duration [4]. Reduces pain relief significantly in patients that underwent thoracotomy [5].

Fig 1: Holding the rib and injecting in the middle the local anaesthetic

Fig 2: The 20ml syringe and the local anaesthetic

Fig 3: Post thoracotomy female patient

Conclusion

Nerve block reduces significantly pain relief in patients with rib fractures. It is also with low cost. It can be given simultaneously with analgesic and ant inflammatory medication. Reduces patient duration of hospitalization and even more suggested admission.

To avoid Xylocaine toxicity especially to oncologicand elderly patients, attention should be given to the administration of dosage (no more than 10mls). Patients need monitoring for at least half an hour post nerve block. Venfon peripherally is required.

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