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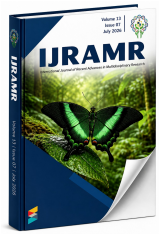

REVIEW ARTICLE

RIB FRACTURES AND NERVE BLOCK OUR TEN YEAR EXPERIENCE

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ABSTRACT

Thoracic trauma frequently associated with morbidity and mortality. Rib fractures considered most common aetiology. The aim of the study is to determine the effectiveness of nerve block in rib fractures patients. **Methods:** During the period January 2017- January 2026 a retrospective study took place. Two hundred seventyeight(278) patients diagnosed already with rib fractures underwent nerve bock by thoracic surgery department(as outpatients at the emergency department and as patients already admitted) atGeneral Hospital of Nicaea-Piraeus, Greece. **Results:** All 278 patients who underwent nerve block and 149 of them received nerve block and Diclofenac (Voltarol) injectionsimultaneously. After a week of post nerve block along with regularly analgesic-NSAID medication, the recordedpain has been reduced to minimum.To mention that 89 patients refused suggested admission in the thoracic department post nerve block.No atelectasis or post traumatic pleural effusion was found on the chest radiography to the follow up patients post 7 to 14 days post nerve block. **Conclusion:** Nerve block seems that is very helpful to reduce pain. Providessatisfactory pain relief and low cost. It can combine with analgesic and antinflamatory medication.Reduces patients hospital stay and even suggested admission Toxicity at xylocaine noticed only aprox 1% in study population.

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INTRODUCTION

Thoracic trauma frequently associated with morbidity and mortality. Rib fractures considered most common aetiology. Rib fractures cause a lot of pain and usually associated with atelectasis, pleural effusion, haemothorax, and pneumothorax.

Objective: The aim of the study is to determine the effectiveness of nerve block in rib fractures patients.

MATERIAL AND METHODS

During the period January 2017- January 2026 a retrospective study took place. Two hundred seventy eight (278) patients (male 203 and female 76) diagnosed already with rib fractures underwent nerve bock by thoracic surgery department (as outpatients at the emergency department and as patients already admitted) at General Hospital of Nicaea-Piraeus, Greece. All patients who underwent nerve block were asked upon questionnaire to estimate the gravity of the pain. (0-nopain, 1-2 minimal pain, 3-5 moderate pain, 6-8 severe pain,9-10 maximum- insufferable pain). All patients who underwentnerve block had in the pain scale upon questionnaire above 5grades. Xylocaine 10-20ml was used as local anaesthetic andwas injected in the middle of the fractured rib (Figure 1).

RESULTS

The population study of 278 patients were 203 male (73,02%) and 76 female (27,33%) age 24-83 years old, mean age38 years old. Mechanism of injury: Car accident 190(68,345%), Falls 55(19,748%), Fight 33(11,870%). Location of the injury wasfound in 169 patients on the right side and 109 on the left side. All patients who underwent nerve block the pain scale uponquestionnaire was above 5. All patients received nerve

Picture 1. Holding the rib and injecting in the middle the local anaesthetic

Picture 2. The 20ml syringe and the local anaesthetic

blockand 149 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 tominimum. To mention that 89 patients refused suggested admission in the thoracic department post nerve block.No atelectasis or post traumatic pleural effusion was found on the chest radiography to the follow up patients post 7 to 14 days post nerve block. Only one female patient aged 64 after having nerve block felt unwell (toxicity at Xylocaine). She received ivfluids monitoring–observation for three hours. Finally she discharged home with good postoperative recovery. Also one male patient octogenarian with cancer felt unwell post nerve block. He received also iv fluids and monitoring and discharge hone within two hours.

DISCUSSION

Rib fractures considered severe entity because of the complication may presented. [1] Pneumothorax, haemothorax, haemopneumothorax lung contusion may happen frequently and intensive care unit long stay, high morbidity and mortality are usually associated[1]. This demonstrates the severity of this entity[1]. Nerve block in rib fractures patients reduces pain and also in combination bupivacaine for nerve block long lasting offers efficacy.[2,3,4] Less pain patients can breathe better andmobilized earlier.[2,3,4] Nerve block is very helpful in patients underwent thoracotomy for cancer and any other disease of the lung.[2,3,4] It is also very helpful and effective in treatment of Reno-ureteral colic by twelve intercostal nerve block with lidocaine versus intramuscular Diclophenac.[5]Diclophenac also can be given in combination with nerve block with excellent result.[2,3,4,6] Combined usage of intercostal nerve block and tumescent anaesthesia is an effective anaesthesia technique for breast augmentation.[4,7] Addition of lidocaine to levobupivacaine reduces intralethal block duration.[4,8] Tibial nerve block it is also very useful using the ultrasound-guided inframalleolar medial plantar nerve perineural injection.[9]

CONCLUSION

Nerve block seems that is very helpfulbecause reduces pain significantly in patients suffering by rib fractures [7, 8]. Offers satisfactory pain relief. The cost considered very low. It can combine with analgesic and ant inflammatorymedication simultaneously. [7, 8].Considered effective also in patients post thoracotomy [7, 8].Reduces patients hospital stay and even more suggestedadmission [7, 8]. To avoid Xylocaine toxicity especially toelderly and oncologic patients, attention should be given tothe dosage during the administrationdosage (no more than 10mls).A Venfon peripherally considered very helpful because iv medication and fluids may given. Monitoring required at least an hour post nerve block.

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