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### RESEARCH ARTICLE

## BENEFITS AND SAFETY OF MIDAZOLAM IN FIBEROPTIC BRONCHOSCOPY – A CROSS SECTIONAL STUDY

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#### Abstract

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#### Introduction:-

Fibreoptic bronchoscopy, an inevitable invasive diagnostic procedure, is usually a stressful procedure for patient. Patients usually complain of persistent cough, pain and breathlessness during and after FOB. International guidelines suggest the use of premedication preferably benzodiazepines for flexible optic bronchoscopy. Midazolam is the generally preferred drug, as it has quicker onset and short duration of action. It has anxiolytic, sedative and muscle relaxant actions. Midazolam hydrochloride is a water-soluble imidazobenzodiazepine. The imidazole ring in midazolam confers an ability to readily form salts, which have increased aqueous solubility. It is water soluble at pH<4 but becomes highly lipid soluble at physiological pH. Lipid solubility minimises pain at injection site and risk of venous thrombosis. Even though, guidelines prefer the use of premedication, it's not universally used in all flexible optic bronchoscopy procedures. There are only few studies regarding the outcome in patient while using midazolam in our settings.

#### Objective:-

To study the added benefits of midazolam as a premedication in Fibreoptic bronchoscopy in a tertiary care centre.

#### Methods:-

A cross sectional study conducted in patients undergoing bronchoscopy in Govt. medical college Thrissur for various reasons. Patients undergoing flexible optic bronchoscopy will be explained about the procedure and the study. Informed consent will be taken from all patients. Baseline Pulse, Blood pressure, Respiratory rate, temperature, oxygen Saturation by pulse oximetry (vital data) will be recorded. Oropharyngeal anaesthesia using 2% lignocaine viscous followed by 10% lignocaine oral spray will be given 2-3 minutes before procedure. 2% lignocaine gel prior to introduction of bronchoscope as per standard protocol. Pulse rate, respiratory rate, oxygen saturation by pulse oximetry and blood pressure will be monitored throughout the procedure and recorded. The need for midazolam is judged by the bronchoscopist and investigator will observe the findings and recorded in Performa. Confidence intervals were computed to measure the strength of association. The level of significance was estimated by p value of <0.05. All analyses were done with the help of Statistical Package for Social Sciences (SPSS) ver. 16

#### Results And Discussion:-

Total no of patients included were 120. Mean age was  $50.56 \pm 7$ . Lowest age was 24 and highest was 60. There were 93 males (77.5%) and females 27 (22.5%). Duration of majority of symptoms was 1-6 month and Malignancy was

the most common indication for bronchoscopy. Consolidation was the most common CXR finding in patients undergone bronchoscopy followed by Hilar prominence and collapse. Mass lesion was the most common CT finding among patients undergone bronchoscopy. In 25.8% people bronchoscopy findings were normal followed by intraluminal lesion in 24.2%. cough, breathlessness was significantly reduced in patients who were taken midazolam ( $P < 0.001$ ) than others. In patients who are taken midazolam, pain during procedure and difficulty felt while tube passing through nose were significantly reduced ( $P < 0.001$ ) and patients were willing to repeating the procedure if needed compared to who are not taken midazolam ( $P < 0.001$ ). In bronchoscopist's perspectives patients who were taken midazolam had good sedation ( $P < 0.001$ ) good cooperation of patients ( $P < 0.001$ ) significantly reduced cough and breathlessness compared to those who are not taken. ( $P < 0.001$ ) sputum production was also significantly reduced in patients who are given midazolam ( $P < 0.001$ ). Time taken to do bronchoscopy was significantly reduced in patients who were given midazolam ( $P < 0.001$ ). Respiratory rate was significantly low in patients received midazolam. 3.2% patients developed adverse events in the form of desaturation and BP fall during the procedure and it was not significantly related to midazolam. There is no need for hospital admission after bronchoscopy and no post procedure complications reported. This study demonstrated more comfort level of patients who were taken midazolam as in previous studies. It also demonstrated time taken to do bronchoscopy was significantly reduced in midazolam taken patients as in previous study.

### Conclusion:-

From the present study the following conclusions were made. Midazolam markedly reduced apprehension and anxiety of the patient. Bronchoscopists were more comfortable while using midazolam. Midazolam is a well-tolerated premedication for flexible fiberoptic bronchoscopy. No serious adverse effects were noted while using midazolam.

### References:

1. Kirstein A. Autoskopie des Larynx und der Trachea (Besichtigung ohne Spiegel). Berliner Klin Wochenschr 1895;22:476-478.
2. Becker HD, Marsh BR. History of the rigid bronchoscope. In: Bolliger CT, Mathur PN, editors. Progress in respiration research, Vol. 30: Interventional bronchoscopy. Basel, Switzerland: Karger; 2000, pp. 2-15.
3. Kollofrath O. Entfernung eines Knochenstückes aus dem rechten Bronchus auf natürlichem Wege und unter Anwendung der direkten Laryngoskopie. Münchener Medizinische Wochenschrift 1897;38:1038-1039.
4. Mutter Museum, College of Physicians of Philadelphia. Exhibitions: Chevalier Jackson collection. Available from: <http://muttermuseum.org/exhibitions/chevalier-jackson-collection>
5. Jackson C. Tracheo-bronchoscopy, esophagoscopy and gastroscopy. St. Louis, MO: The Laryngoscope Company; 1907.
6. Beamis JF Jr, Mathur PM. Interventional pulmonology: current status and future direction. In: Mehta AC, Jain P, editors. Respiratory medicine, Vol. 10: Interventional bronchoscopy: a clinical guide. New York: Springer Science+Business Media; 2013, pp. 3-14.
7. Miyazawa T. History of the flexible bronchoscope. In: Bolliger CT, Mathur PN, editors. Progress in respiration research, Vol. 30: Interventional bronchoscopy. Basel, Switzerland: Karger; 2000, pp. 16-21.
8. Swanson KL, Prakash UBS, Midthun DE, Edell ES, Utz JP, McDougall JC, Brutinel WM. Flexible bronchoscopic management of airway foreign bodies in children. Chest 2002;121:1695-1700
9. Ikeda S, Yanai N, Ishikawa S. Keio J Med. 1968 Mar; 17(1):1-16.
10. D'Ippolito R, Foresi A, Castagnetti C, Gesualdi S, Castagnaro A, Marangio E, Olivieri D, Monaldi Arch Chest Dis. 2007 Mar; 67(1):23-9
11. Ettinger DS, Wood DE, Akerley W, Bazhenova LA, Borghaei H, Camidge DR, et al. Non-small cell lung cancer, version 1.2015. J Natl Compr Canc Netw. 2014;12:1738-61.
12. Chhajed PN, Somandin S, Baty F, Mehta AJ, Azzola A, Leuppi J, et al. Therapeutic bronchoscopy for malignant airway stenoses: Choice of modality and survival. J Cancer Res Ther. 2010;6:204-9.
13. Andersen HA, Fontana RS, Harrison EG Jr. Transbronchoscopic lung biopsy in diffuse pulmonary disease. Dis Chest 1965;48:187-192.
14. Andersen HA, Fontana RS. Transbronchoscopic lung biopsy for diffuse pulmonary diseases: technique and results in 450 cases. Chest 1972;62:125-128.
15. Levin DC, Wicks AB, Ellis JH Jr. Transbronchial lung biopsy via the fiberoptic bronchoscope. Am Rev Respir Dis 1974;110:4-12.
16. Koerner SK, Sakowitz AJ, Appelman RI, Becker NH, Schoenbaum SW. Transbronchial lung biopsy for the diagnosis of sarcoidosis. N Engl J Med 1975;293:268-270

