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ORIGINAL ARTICLE

Comparison of the Incidence of Sore Throat in Initial Postoperative Period among Patients who Endured General Anesthesia with Endotracheal Intubation for Abdominal and Gynaecological Surgeries Who are Given Normal Saline vs Dexamethasone

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ABSTRACT

Aim: To compare the incidence of sore throat in the initial postoperative period with dexamethasone and saline in patients enduring general anaesthesia with endotracheal intubation for abdominal and gynaecological surgeries.
Study design: A Randomized controlled trial
Place and Duration: In the departments of Anesthesia and Gynaecology Jinnah Postgraduate Medical Centre Karachi for six-months duration from July 2021 to December 2021.
Methodology: 130 patients planned for abdominal and gynaecological surgery on elective lists under general anesthesia were included. The two groups of the patients were formed and patients were equally divided in two-groups. Group I was given 8 mg (2 ml) of dexamethasone i / v before surgery, and group II was given 2 ml of saline i / v before surgery taken as control. The comparison of results was done with chi-square test. To record sore throat; visual analogue score (VAS) was used. Less than or 4VAS score was measured as no sore throat and > 4VAS score was measured as sore throat.
Results: The incidence of postoperative sore throat was less in group (I) than in the group II (control) who were given GA with endotracheal intubation after 24-hours. 14 (21.5%) subjects of the dexamethasone experienced postoperative sore throat in comparison to 33 (50.8%) patients in the control group. ($p < 0.01$).
Conclusions: Preoperative usage of dexamethasone was related with a lower frequency of sore throat postoperatively.
Keywords: General anaesthesia, post-operative sore throat, visual analogue score (VAS).

INTRODUCTION

Postoperative sore throat is a communal issue in subjects enduring general anaesthesia with endotracheal intubation[1-2]. The suggested frequency is as much as 40%. The sore throat incidence has been found to increase with difficulties in intubation, age, duration of surgical treatment, and patient position all through the surgery[3]. A sore throat is a critical complaint, especially when post-operative pain is better controlled with analgesia[4-5]. Typical actions for the anticipation of sore throat postoperatively consist of smaller sized and low-pressure endotracheal tubes inside the cuff. During lengthy surgical procedure, whilst NO is used as an aesthetic, it may be absorbed through the endotracheal cuff and results in pressure rise of intra-cuff, resulting in ischemic event to the pharyngeal mucosa and an extended incidence of sore throat[6-7]. The prevalence of POST may be as high as ninety% (Jensen et al., 2016; Saarnivaara and Grahne, 2017; Stride, 2018), and hoarseness has been said between 5% and 44% in various research (Winkel and Knudsen, 2016). In the past, many studies were posted on POST and on non-pharmacological or non-pharmacological techniques of decreasing hoarseness. Pharmacological strategies, consisting of the arrangement of a correctly sized endotracheal tube, the absence or presence of a cuff, or using a respiratory aid consisting of a ball or dagger, and numerous topical or intravenous medicinal drugs[8-9]. These drugs encompass lignocaine, ketamine, dexamethasone, magnesium sulphate and aspirin. The use of medicine which include ketamine may adversely have an effect on the haemodynamics or the CNS. Rajan et alin 2018 stated that cuff lidocaine decreases POST; though rise hoarseness because of paresis of the nerve whilst Kalil et al in 2014 describes that aspirin gargling may additionally intrude with coagulation[10-11]. Earlier analysis show that dexamethasone is powerful in lowering the prevalence of post-operatively sore throat whilst administered by various routes, namely intravenous (Thomas and Beevi, 2017; Subedi et al., 2019; Zhao et al., 2015; Jiang et al., 2018), fogging (El-badawy and Salama 2016) or local (Lee et al., 2017)[12]. The goal of the analysis was to compare the incidence of sore throat in the initial postoperative period with dexamethasone and saline in patients enduring general anaesthesia with endotracheal intubation for abdominal surgery.

METHODOLOGY

The randomized controlled study was conducted at the departments of Anesthesia and Gynaecology Jinnah Postgraduate Medical Centre Karachi for six-months duration from July 2021 to December 2021. 130 patients planned for abdominal and gynaecological surgery on elective lists under general anesthesia were included. A non-probability sampling technique was used. Elective surgery under general anaesthesia and ASA grade I and II

endotracheal intubation at the age of 20 to 60 were included. The study excluded patients with sore throat, BMI> 40, severe heart, respiratory, liver or kidney disease, DMand long-term use ofanalgesics and corticosteroids.

Data Collection: After local ethical committee approval, 130 male and female patients were selected from the surgical and gynaecological department. The two groups of the patients were formed with fifty percent distribution in each. Group I was given 8 mg (2 ml) of dexamethasone i / v before surgery, and group II was given 2 ml of saline i / v before surgery taken as control. The comparison of results was done with chi-square test. To record sore throat; visual analogue score (VAS) was used. The SPSS version 21.0 was applied for analysis of the data. A chi-square test was applied for the sore throatcomparisonamong the two groups.

RESULTS

Details of the results are given in Tables 1, 2, 3, 4, 5.

Table 1: percentage and Frequency of Sore Throat among two Groups

Sore Throat	Study Groups	
	Group I	Group II
Yes	14(21.5%)	33(50.8%)
No	51(78.5%)	32(49.2%)
Total	65(100%)	65(100%)

Table 2: Age wise distribution of patients

Ages	Study Groups	
	Dexamethasone (I)	Normal Saline (II)
up to 25	10(15.4%)	13(20%)
26 to 50	39(60%)	42(64.6%)
> 50	16(24.6%)	10(15.4%)
Total	65(100%)	65(100%)

Table 3: Gender wise distribution of the two studied groups

Gender	Study Groups	
	Dexamethasone (I)	Normal Saline (II)
Female	36(55.4%)	34(52.3%)
Male	29(44.6%)	31(47.7%)
Total	65(100%)	65(100%)

Table 4: Gender relation with the Sore Throat

Sore Throat	Gender		
	Female	Male	Total
No	41(58.6%)	42(70%)	83(63.8%)
Yes	29(41.4%)	18(30%)	47(36.2%)
Total	70(100%)	60(100%)	130(100%)

Table 5: Relation of ages with the sore throat

Ages	Sore Throat		
	No	Yes	Total
up to 25	15(18.1%)	7(14.9%)	22(16.9%)
26 to 50	47(56.6%)	34(72.3%)	81(62.3%)
>50	21(25.3%)	6(12.8%)	27(20.8%)
Total	83(100%)	47(100%)	130(100%)

DISCUSSION

During the length of outpatient surgery, particularly laparoscopic surgical treatment, the whole lot is achieved to make sure that the stay within the hospital is minimum (24-48 hours), the patient person feels secure and returns to day-by-day activities as quickly as conceivable. POST has been stated within the literature following using supraglottic gadgets,endotracheal tube and even a face mask[11-13]. The root reason may be irritation due to damage to the oropharynx, the base of the tongue, or the returned of the throat, or a hypersensitivity to any part of the respiratory tract in use[14]. Additional trauma to the deeper layers or epithelium of the vocal cords results in edema and swelling, which could alter voice (Vyshnavi and Kotekar, 2019). Hoarseness generallydissolvesin less than six-weeks spontaneously (Yamanaka et al., 2009)[15-16]. The inflammatory cascade starts after the primary image. It is therefore important thatinitial infection must be inhibited with the aid of corticosteroids (Nayak and Patra, 2018). Dexamethasone is a strong anti inflammatory and immunosuppressive corticosteroid, 26.6 and .6 times stronger than prednisone and cortisol, correspondingly (Lee et al., 2017)[17]. Zhao et al in 2016 stated that dexamethasone has properties of anti inflammatory and is stated to be powerful in treating a sore throat and reduces irritation of the airways after traumatic intubation. It also has anantiemetic effect within the perioperative length (Patra and Nayak, 2008) and to enhance the analgesic effect. It has a short onset of action and a brief duration of action. This can be taken into consideration a best choice as it is cheaper[18]. It decreases the manufacturing of inflammatory mediators, leukotrienes and prostaglandins. The mechanism behindhand is phospholipase-A2inhibition through the manufacturing of calcium-dependent phospholipid-binding proteins recognised as annexins (Yao et al., 2019) and cyclooxygenases (Lubenow et al., Nd)[19-20].

Topical dexamethasone therapy, together with nebulization or using cuffed dexamethasone, ensures that maximum drug concentration to the area of interest, i.e., the upper respiratory tract, and has less side effects[21]. Topical therapies permit for lower dosages and decrease systemic side effects (Ibrahim et al., 2015). The prevalence of POST became reduced to 17% while patients were nebulized with dexamethasone. Therefore, fogging has been located to be the best method of lowering POST. Salam et al, 2016; the severity and prevalence of POST have been drastically condensed in the dexamethasone institution at 2, 4, 8 and 12 hours after extubation compared to the salt group; but, after 24 hours there was no great distinction[22]. No complications related to dexamethasone nebulization had been suggested. According to Kuryama et al. (Kuriyama et al., 2019) determined that aerosolized corticosteroids are better than non-pain relievers at preventing POST. The laryngeal edemamechanism after endotracheal intubation is the penetration of polymorphic nuclear cells and fibrous exudates (Patra and Nayak, 2008)[23]. In this study we have 14 (14.5%) sufferers out of 65 who acquired pre-operative doses of I / V dexamethasone had POST compared to the control group, i.e.,33 (50.8%) patients, and the difference is statistically high. ($p < 0.01$). In phrases of age, all sufferers in our examine institution have been similar. Wang et al. Investigated the impact of dexamethasone on POST after thyroidectomy and determined that the prevalence of postoperative sore throat is reduced in patients who

obtained dexamethasone earlier than surgical operation[24-25].

CONCLUSION

Preoperative usage of dexamethasone was related with a lower frequency of sore throat postoperatively.

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