Local Anesthesia Versus Placebo in Flexible Nasopharyngo-laryngoscopy

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Abstract: *Background*: The flexible nasopharyngolaryngoscopy is the commonest procedure in both out patients and in patients for the diagnosis of diseases. Since this procedure is at best uncomfortable and at worst intolerable making the procedure difficult, so topical anesthesia is generally used prior the procedure.

Objective: To analyze and compare the role of local anesthesia with placebo in flexible nasopharyngolaryngoscopy.

Materials and Methodology: A prospective, longitudinal and analytical study conducted among 84 patients required flexible nasopharyngolaryngoscopy dividing in two groups of 4% xylocaine and normal saline spray each. The questionnaires about nasal pain, throat discomfort, bad taste, feeling of nausea and overall discomfort were filled up by using numeric rating scale. Data was analyzed using SPSS 11.5 software.

Results: Regarding the nasal pain, throat pain, feeling of nausea and overall discomfort, they were statistically not significant in both groups. Whereas the bad taste score was less in normal saline spray group as compared to 4% xylocaine spray group showing statistically significant (p=0.000).

Conclusion: Though we do use topical local anesthesia frequently for the flexible nasopharyngolaryngoscopy, there is no such extra benefit as compared to normal saline spray.

Keywords: Flexible nasopharyngolaryngoscopy, normal saline, topical anesthesia.

INTRODUCTION

Nasopharyngolaryngoscopy (NPL) is important diagnostic means to examine the nasal cavity, nasopharynx and larynx respectively as this increases the brightness, magnification and also able to take video and still images [1]. So, this is the commonest procedure performed by the otolaryngologists.

Since this procedure is at best uncomfortable and at worst intolerable for the patients as stated by Sunkaraneni and Jones [2], so topical anesthesia is generally used for making the procedure easy.

There are different studies about use of the topical anesthesia. Some studies showed that there is no benefit of using topical anesthesia in flexible laryngoscopy while comparing with normal saline [3-8]. while other study showed significantly worse pain scores after xylocaine spray versus no spray [5].

We also use NPL frequently for the diagnostic procedure using the topical anesthesia only. Some of our patients feel uncomfortable whereas others even feel painful experience during the procedure. So, the main aim of our study is to analyze and compare the role of local anesthesia with placebo in flexible nasopharyngolaryngoscopy, to see if there is any benefit or not with the use of topical anesthesia. To the best of our knowledge, this is the first of its kind of study performed in Nepal.

MATERIALS AND METHODOLOGY

This was the prospective, randomized and longitudinal study performed in the department of otorhinolaryngology and head and neck surgery of the Kathmandu University Hospital, Dhulikhel, Kavre from 1st December 2011 to 1st December 2012.All the patients requiring flexible endoscopy and who were of >13 years were included whereas those mentally retarded, psychiatric problem, who were unable to fill the questionnaire and allergic to spray were excluded.

For the study purpose questionnaire were constructed and then consulted with statistician regarding the validity and reliability of the questionnaire. The questionnaires were framed in English and translated into native Nepali. Questionnaires covered nasal pain/discomfort, throat pain/discomfort, feeling of nausea, bad taste and overall discomfort in the form of numeric rating scale to record patient experiences. A score of 0 was considered no pain/discomfort whereas score of 10 was considered maximum discomfort/pain (*Appendix*).

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There were total 84 patients included in the study. Informed consent was taken prior to the procedure and procedures were performed in accord with the *Helsinki Declaration of 1975*.We had used the lottery system for randomization of the 4% xylocaine spray and normal saline spray group. The lottery was used just prior to flexible NPL by one of our staff. After the use of spray, decongestion (0.05% oxymetazoline) was used in cotton pledget depending on the size of the nasal cavity in both the cases for the easy passage of the endoscope. After 10 minutes, the decongested cotton pledget was removed and the procedure was performed using a Karl Storz 3.7mm unsheathed endoscope by the same Otolaryngologists to prevent the procedural bias. After the procedure, the patients were given the questionnaires with clear instructions on how to complete them. All the data were collected and then analyzed using the SPSS (Statistical Package for the Social Sciences) 11.5 software. '*p*' value was calculated using the paired sample "t" test and *p* value of <0.05 was taken as significance.

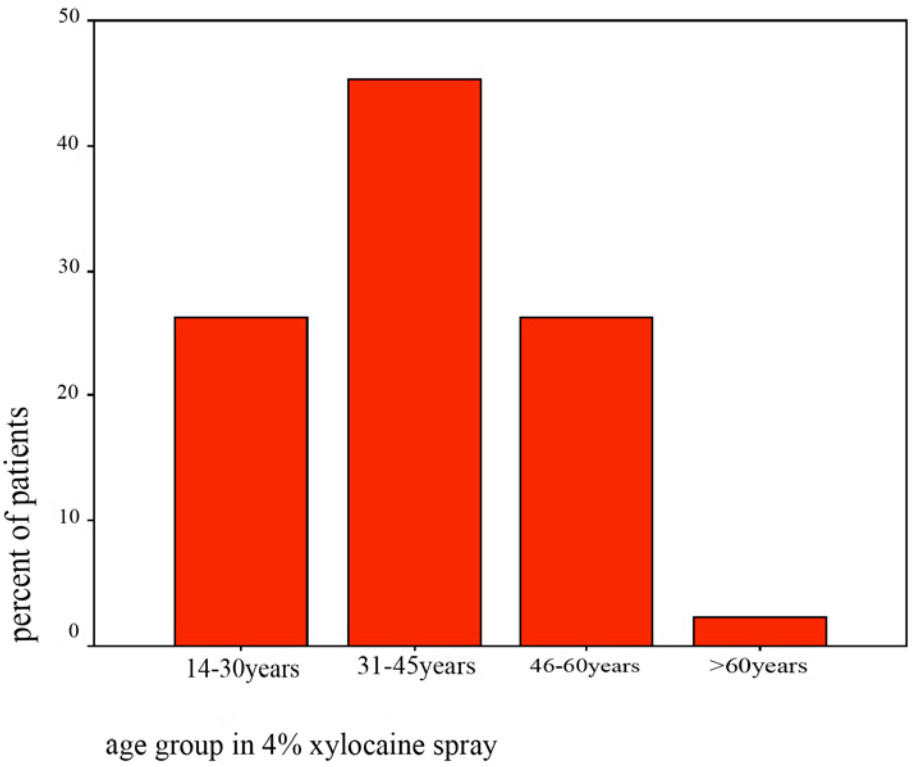
RESULTS

There were total 84 patients included in the study. Among them 42 were in 4% xylocaline spray group and 42 were in normal saline spray group with 22 females in 4% xylocaine spray group whereas 18 females were in normal saline spray group as shown in Table **1**.

Regarding the age group, most of patients fell within 31-45years in both groups as shown in Figures **1** and **2**.

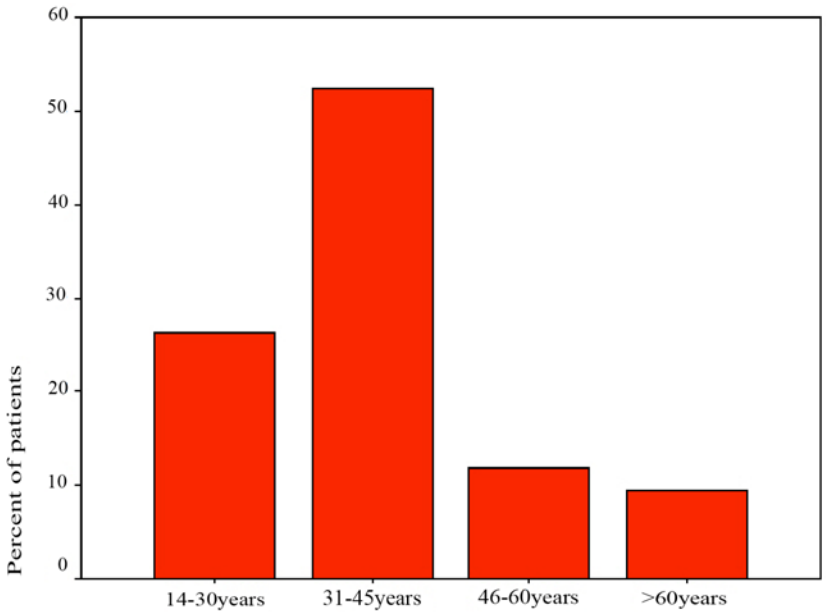
Table 1: Showing Distribution of Type of Procedure and Gender (n=84)

Type of procedure	Gender		Total
	Male	Female	
4% xylocaine spray with oxymetazoline	20	22	42
Normal saline spray with oxymetazoline	24	18	42
Total	44	40	84



*Mean with SD=39.16+/-12.71years

Figure 1: Showing distribution of age groups in 4% xylocaine spray group (n=42).



*Mean + SD= 39.64+/-13.76years

Figure 2: Showing distribution of age groups in normal saline spray group (n=42).

Regarding the nose pain, throat pain, feeling of nausea and overall discomfort, they were statistically not significant in both groups. Whereas the bad taste score was less in normal saline spray group as compared to 4% xylocaine spray group showing statistically significant (p=0.000) as shown in Table **2**.

DISCUSSION

The flexible NPL is a routine procedure in otorhinolaryngology clinics for the diagnosis of the disease as this gives the clear anatomical view. This procedure is generally performed under topical anesthesia preparation whether or not the patients like

Table 2: Showing the Comparison Between 4% Xylocaine Spray Group with Normal Saline Spray Group (n=84)

Groups		Mean	N	Std. Deviation	Std. Error Mean	P value
4% xylocaine spray with oxymetazoline	Nose pain or discomfort	4.1429	42	2.63718	.40693	.018
Normal saline spray with oxymetazoline	Nose pain or discomfort	2.8095	42	1.54979	.23914	
4% xylocaine spray with oxymetazoline	Throat pain or discomfort	1.8571	42	2.14785	.33142	0.47
Normal saline spray with oxymetazoline	Throat pain or discomfort	1.5714	42	1.66957	.25762	
4% xylocaine spray with oxymetazoline	Feeling of nausea	.8095	42	1.51799	.23423	0.64
Normal saline spray with oxymetazoline	Feeling of nausea	1.0000	42	1.92544	.29710	
4% xylocaine spray with oxymetazoline	Bad taste	6.5238	42	1.13133	.17457	0.000
Normal saline spray with oxymetazoline	Bad taste	1.5238	42	.85216	.13303	
4% xylocaine spray with oxymetazoline	Overall discomfort	3.5714	42	2.56755	.39618	0.13
Normal saline spray with oxymetazoline	Overall discomfort	2.7143	42	2.05160	.31657	

the local anesthesia. We performed this study to compare the topical anesthesia with placebo in the form of normal saline.

Our study showed that there were 22 females in 4% xylocaine spray group whereas only 18 females in normal saline spray group. This difference may be because of randomization.

Regarding the distribution of age group in both the groups, most of patients fell within 31-45 years, this could be because most of those age groups are more conscious of their health as they are the earners of the family.

Our study showed that the mean score of nose pain and overall discomfort was more in 4% xylocaine spray group as compared to normal saline, whereas mean score of throat pain and nausea was somehow similar in both groups showing statistically non significant. This was similar to study performed by Frosh *et al.* [5]. Likewise, the bad taste was more in 4% xylocaine spray group as compared to normal saline which was statistically significant like that of other study [5].

The other study also showed that the local anesthesia has no benefit over placebo [5, 7, 8]. The study performed by De Freitas *et al.* [9] showed that bad taste associated with Co-phenylcaine spray over 4% lidocaine and 1:1000 epinephrine cotton pledget nasal packing is statistically significantly worse but they did not compare 4% lidocaine with placebo.

Our study showed that all the components except the bad taste was more in 4% xylocaline as compared with normal saline group showing no extra benefit of topical local anesthesia but even placebo is better in taste matter which is similar to other study [10].

In order to minimize the bias, we did the randomization of the procedure and also same otorhinolaryngologists did the procedure. Like wise for the easy passage of endoscope we used the decongestant (0.05% oxymetazoline) in every case to prevent confounding variable.

Since whether or not to use the topical anesthetic agent is a matter of discussion, however the other studies like ours showed that the topical agents did not give any extra benefit over placebo but instead cause unpleasant effects to the patients.

The main limitation of our study is that of sample size and double blinding of the procedure. We will get the still more accurate results if do the study in large sample of population and also by performing double blinding of the procedure.

CONCLUSION

Though we do use topical local anesthesia frequently for the flexible nasopharyngolaryngoscopy, there is no such extra benefit as compared to normal saline spray. But instead cause more cost and bad taste to the patients.

APPENDICES

Performa

Questionnaires

Name: Date:

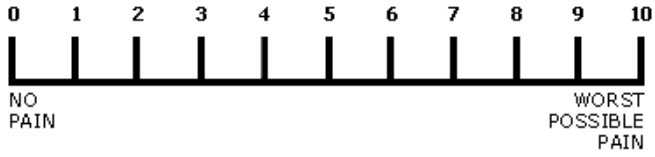
Age:

Sex:

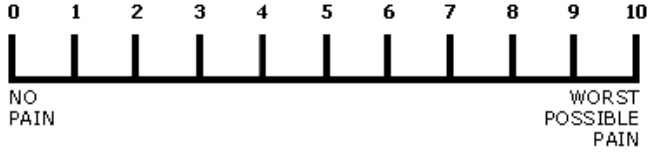
Occupation:

Indication for NPL:

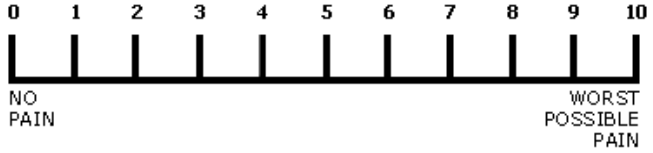
1. Nose pain/ discomfort



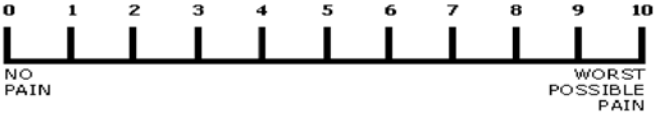
2. Throat pain/discomfort



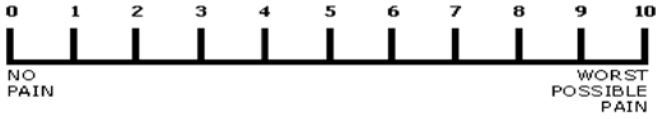
3. Feeling of nausea



4. Bad taste



5. Overall discomfort



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Received on 11-03-2013 Accepted on 26-05-2013 Published on 20-06-2013