COMPARISON OF COMBINED ORAL & TOPICAL VERSUS TOPICAL CORTICOSTEROIDS AFTER FUNCTIONAL ENDOSCOPIC SINUS SURGERY OF NASAL POLYPOSIS

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ABSTRACT

Objective: To compare combined oral and topical corticosteroids versus only topical corticosteroids after functional endoscopic sinus surgery in cases of chronic rhinosinusitis with nasal polyposis.
Study Design: Randomized controlled trials.
Place and Duration of Study: The study was carried out at Combined Military Hospital (CMH) Quetta and Combined Military Hospital (CMH) Okara, from Apr 2014 to Apr 2016.
Material and Methods: Total 150 cases of chronic rhino sinusitis with nasal polyps were selected. The cases were randomly divided into two groups. All the cases were operated via functional endoscopic sinus surgery. In group A, patients were given oral corticosteroids after the surgery (for one month duration, deltacortil 1mg/kg body weight for two weeks and tapering off in the next two weeks followed by local corticosteroid) and Group B individuals were put on topical corticosteroids soon after the surgery. All the cases were observed for any signs of recurrence. Recurrence of disease was defined as evidence of nasal polyposis on nasal endoscopy.
Results: Mean age of patients was 39.22 ± 13.9 years and there were total 72 (48%) males and 78 (52%) females among all cases. There were 14 cases of recurrence of disease in group B while in group A, only 5 cases of recurrences were seen (p=0.047). It shows that group A patients had significantly less recurrence than cases of group B.
Conclusion: Combination of oral and topical corticosteroids was significantly better with decrease recurrence as compared to topical steroids only in cases of chronic rhinosinusitis who were operated with functional endoscopic sinus surgery.

Keywords: Chronic rhinosinusitis, Functional endoscopic sinus surgery (FESS), Nasal polyps.

INTRODUCTION

Chronic rhinosinusitis is a major public health disorder which has a significant socioeconomic effect. The prevalence of chronic rhinosinusitis varies from 5-15%[1,2]. Chronic rhinosinusitis with nasal polyps (CRSwNP) afflicts 0.5% to 4% of population worldwide and nasal polyps are present in around 20% of individuals with chronic rhinosinusitis[3]. Chronic rhinosinusitis with nasal polyps (CRSwNP) is defined as presence of at least two of five symptoms (facial congestion, facial pain/ pressure/ fullness, nasal obstruction, purulent anterior/posterior nasal discharge and anosmia/hyposmia), inflammation (discolored mucosa, edema of middle meatus, or ethmoid area) documented by endoscopy and nasal polyps in middle meatus (documented by endoscopy or computed tomograms)[4].

Etiology of chronic rhinosinusitis is multifactorial with nasal allergy and infection being the top most culprits. Environmental allergens, infectious agents (bacteria, fungi and viruses) and air pollutants cause chronic inflammation and edema of local mucosa leading to ostial obstruction, retention of debris, purulent discharge and polypoidal changes in mucosa. Medical therapy including antibiotics and steroids are of utmost importance in all these patients[5].

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Functional endoscopic sinus surgery is the standard surgical practice to treat the cases of chronic rhinosinusitis with nasal polyps. It is recommended that postoperatively medical therapy including topical corticosteroids should be continuously used in all the operated cases to achieve successful outcome[3]. Soon after nasal surgery, nasal mucosa is under process of healing with excessive crusting. The healing phase may take a month or so. During this phase, theoretically oral corticosteroids should be more appropriate than topical steroids. However once the mucosa has healed properly, topical corticosteroids are definitely of optimum use.

In the present study we have compared topical corticosteroids alone with combination of initial oral and later topical corticosteroids in all the cases of chronic rhinosinusitis with nasal polyps who were operated via functional endoscopic sinus surgery (FESS).

MATERIAL AND METHODS

It was a randomized controlled trial carried out in Combined Military Hospital (CMH) Quetta and (CMH) Okara, from Apr 2014 to Apr 2016. All the cases fulfilling inclusion criteria were included in the study. The sample size was calculated using Rao software online, desired precision at 0.03 and 95% confidence interval. The calculated sample size was 163. Sampling technique used was nonprobability convenient sampling. Adults more than 12 years of age belonging to any gender having chronic rhinosinusitis with nasal polyposis (unilateral or bilateral) were included in the study. Thirteen cases did not fill inclusion criteria so 150 cases were selected for the subject study.

Previously operated individuals with same disease or individuals who had any contraindication to corticosteroids like hypertension, diabetes mellitus, diabetes insipidus and glaucoma were excluded. Individuals who had been using corticosteroids during previous 6 months, having chronic illnesses like chronic liver disease or chronic renal disease, ischemic heart disease or malignant nasal diseases were excluded.

The cases were randomly divided into two groups using random numbers table (75 cases in each group). Group A patients were given oral corticosteroids after the surgery (for one month duration, deltacortil 1mg/kg body weight for two weeks and tapering off in the next two weeks followed by local corticosteroid) and group B individuals were put on topical corticosteroids soon after the surgery. Topical corticosteroid given was Beclomethasone Dipropionate "Rinoclenil" nasal spray, two puffs twice a day.

Both the groups were followed up monthly for one year after surgery for recurrence of the disease. Recurrence of disease was defined as evidence of nasal polyposis on nasal endoscopy or recurrence of sinonasal symptoms. On every follow up, endoscopic examination was carried out under local anesthesia to see any sign of recurrent disease. Any case that had developed even small nasal polypoidal mass, seen on endoscopic examination was termed as recurrent disease.

Data had been analyzed using statistical package for social sciences (SPSS) version 20. Frequency and percentage were calculated for qualitative variables while mean and standard deviation (SD) were calculated for quantitative variable. Chi square was used to compare qualitative variable between the two groups. A p-value <0.05 was considered significant.

RESULTS

There were 75 cases in each group. Mean age of patients was 39.22 ± 13.9 years. There were total 72 (48%) males and 78 (52%) females. Mean age of patients in group A was 39.81 ± 14.7 years and mean age of patients in group B was 38.63 ± 13.2 years. Both groups were comparable in terms of age and gender as shown in tables-I,II. There were 14 cases of recurrence of disease in group B while in group A, only 5 cases of recurrences were seen (p=0.027). It shows that group A patients had significantly less recurrence than

cases of group B i.e. treatment of group A was significantly better (table-III).

DISCUSSION

Chronic rhinosinusitis with nasal polyps is a life long illness. Functional endoscopic sinus surgery is the procedure of choice to relieve nasal obstruction, removal of diseased mucosa and establish aeration of paranasal sinuses. The etiology of chronic rhinosinusitis with nasal polypsis is multifactorial, with nasal allergy and infection being the main culprits. After nasal surgery, nasal mucosa is under process of healing and there is excessive crusting and nasal discharge which hurdle the proper delivery of topically applied steroids. During this phase of healing, topical corticosteroids would not be much effective for subject purpose and may even negatively affect the healing process of the middle meatus. The healing phase may take a month or so. Once the mucosa has healed properly, topical corticosteroids are definitely of optimum use. European position paper on rhinosinusitis 2012[6] has recommended both oral and topical steroids in cases of chronic rhinosinusitis with nasal polyposis because of same reason.

In the present study, we compared cases who used oral corticosteroids in the immediate post operative period followed by topical corticosteroids with those cases who used only topical corticosteroids post-op. We found significantly better results in those who had used oral plus local corticosteroids. Our study is the only one of its kind. There are no studies in literature which have compared oral plus topical with only topical after functional endoscopic sinus surgery. However our results are similar to those shown by Head et al[7] who used a short course of oral steroids in chronic rhinosinusitis and found improvement in symptom severity and size of nasal polys. But they failed to show whether the effect of this short course sustained beyond the short follow up period[7]. On the other hand Umar et al compared oral versus topical steroids in nasal polyps and studied their effect[8] which is in contradiction to our results. They showed topical corticosteroids to be significantly better than oral steroids for nasal polyps. However the subjects of above mentioned studies[7,8] were cases of nasal polyps only unlike our cases of chronic rhinosinusitis with polyps, who were operated with functional endoscopic sinus surgery.

Table-I: Age wise distribution among the group.

Group	N	Mean	Std. Deviation	Std. Error Mean
Group A	75	39.81	14.722	1.700
Group B	75	38.63	13.293	1.535

p=0.605

Table-II: Group wise gender distribution among the groups.

Gender	Groups		Total
	Group A	Group B	
Male	34 (45.3%)	38 (50.6%)	72 (48%)
Females	41 (54.6%)	37 (49.4%)	78 (52%)
Total	75	75	150

p=0.513

Table-III: Recurrence of disease in the study groups.

Recurrence	Groups		Total
	Group A	Group B	
Positive recurrence	5 (6.6%)	14 (18.6%)	19 (12.6%)
No recurrence	70 (93.3%)	61 (81.3%)	131 (87.3%)
Total	75	75	150

p=0.027

CONCLUSION

Combination of oral and topical corticosteroids was significantly better with to decrease recurrence as compared to topical steroids only in cases of chronic rhinosinusitis who were operated with functional endoscopic sinus surgery.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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