



EFFECTIVENESS OF VITAMIN E AND ITS ROLE IN MANAGEMENT OF GRADE II & III HAEMORRHOIDS.

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Abstract:

2774

Objective: The aim of the study is to evaluate the effectiveness of vitamin E due to its potent antioxidant with anti-inflammatory properties by assessing Vitamin E levels and Visual analogue scale.

Methods: This prospective randomized study was carried out for a period of 4 months in private hospital, Chennai. A total of 30 patients were enrolled based on the inclusion and exclusion criteria and were randomized into 2 groups Group A (standard treatment) and Group B (standard treatment plus vitamin E oral supplement). The effectiveness was observed by assessing vitamin E levels and VAS score at baseline, 1st, 3rd and 5th week after the start of oral vitamin E supplementation.

Results: In total, 30 patients were randomized into Group A and Group B with 15 patients each. Among 30 patients 18 patients were males and 12 patients were females. In that 7 patients in age group 18-25 years, 13 patients in age group 26-35 years, 8 patients in age group 36-45 years and 2 patients were above 45 years of age. At baseline, the average range of intensity of pain was 6, at 1st week the VAS score was 6 in Group A and 4 in Group B, at 3rd week 5 in Group A and 3 in Group B and at 5th week 4 in Group A and 1 in Group B. Based on Vitamin E levels, the average level at base line was 5 in Group A and 4.1 in Group B, followed by 5 in Group A and 4.5 in Group B at 1st week, 4.8 in Group A and 5.6 in Group B at 3rd week, and 4.7 in Group A and 7 in Group B at 5th week.

Conclusion: Our study concluded that the vitamin E levels increased and the intensity of pain has reduced after receiving vitamin E oral supplementation along with standard treatment which was a good sign for its effectiveness in haemorrhoids.

Keywords: Haemorrhoids, Vitamin E, alpha-tocopherol, oxidative stress, antioxidant.

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Introduction:

Haemorrhoids are also known as piles, is a very common anorectal condition, which was defined as symptomatic enlargement and distal displacement of normal anal cushions. These are vascular structures in the anal canal (1, 2). The natural evolution of haemorrhoids is benign, but they tend to get worse over time if not treated properly at right time (3, 4). Constipation, stress and prolonged straining are the major factors associated with the etiologies of haemorrhoidal development (5). Haemorrhoids are classified into 2 types, internal haemorrhoids often result in painless, bright red rectal bleeding when defecating (6) and external haemorrhoids often result in pain and swelling in the area of the anus (7). Diagnosis was typically done by physical examination through a digital rectal examination (DRE) or use of a proctoscope (8), colonoscopy and Sigmoidoscopy. The conservative and medical management includes, fiber rich foods, stress relief exercises, oral fluids, NSAIDs, Sitz bath and rest (9). Topical agents includes ointments, suppositories, like lidocaine, petrolatum jelly or zinc oxide, steroids or vasoconstrictors (10). Surgical procedures includes Excisional hemorrhoidectomy, rubber band ligation (11), Stapled hemorrhoidectomy, or Doppler-guided transanal hemorrhoidal dearterialization.

Oxidative stress can result from or be enhanced by a large variety of conditions, including nutritional imbalance, exposure to chemical and physical agents in the environment, strenuous physical activities, injury, and hereditary disorders. There are many enzymes and compounds which are involved in protecting cells from the adverse effects of oxidative stress, vitamin E occupies an important and unique position in the overall antioxidant defense (12). Vitamin E is a group of eight fat soluble compounds that include four tocopherols and four tocotrienols. Vitamin E is a potent antioxidant with anti-inflammatory properties (13). The antioxidant function of vitamin E is closely related to the status of many dietary components. Exogenous supplementation of vitamin E lowers oxidative stress

and reactivate enzymatic antioxidant (14). Also, vitamin E supplementation is beneficial to certain groups of the population. Co-supplemented with antioxidant vitamin like vitamin E, greater protection is evidenced against the oxidative stress. Several lines of evidence suggest that among different forms of vitamin E, alpha-tocopherol (AT) has potential beneficial effects (15). Hence, the aim of the study is to evaluate the effectiveness of vitamin E due to its potent antioxidant with anti-inflammatory properties. The objective of the study is to evaluate the effectiveness of vitamin E by using Visual Analogue Score and vitamin E levels.

Materials and Methods:

The study was a prospective randomized study which was carried out in a private hospital (Tamil Nadu) for a period of 4 months. Before the study, the subjects were asked to sign the informed consent forms. The subjects who are above the 18 years of age and diagnosed with grade 2 and 3 haemorrhoids were included in the study. The subjects below 18 years of age and not willing to sign the consent form, subjects using corticosteroids or other pain management medications and subjects diagnosed with grade 1 and 4 were excluded from the study. In total 30 patients were enrolled based on the inclusion and exclusion criteria. The subjects were then randomized into 2 groups Group A (n=15) where the subjects received standard treatment and Group B (n=15) where the subjects received both the standard treatment along with vitamin E oral supplement. The effectiveness was observed using the VAS score and also the vitamin E levels at baseline, 1st, 3rd and 5th week after the start of oral vitamin E supplementation. The obtained results were calculated using SPSS and then shown in the form of percentages.

2775

Results and Discussion:

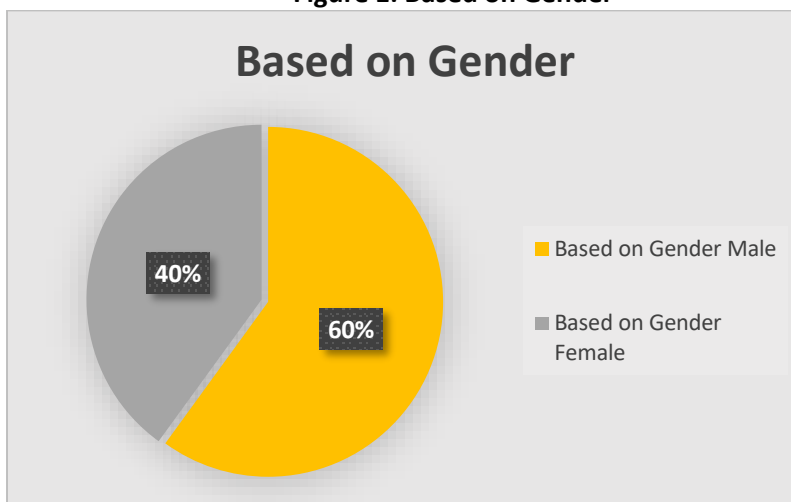
In total, 30 patients were randomized into Group A and Group B with 15 patients each. Among 30 patients 18 patients were males and 12 patients were females shown in Table 1 and figure 1.

Table 1: Based on Gender

Gender	No. of patients (n=30)
Male	18
Female	12



Figure 1: Based on Gender



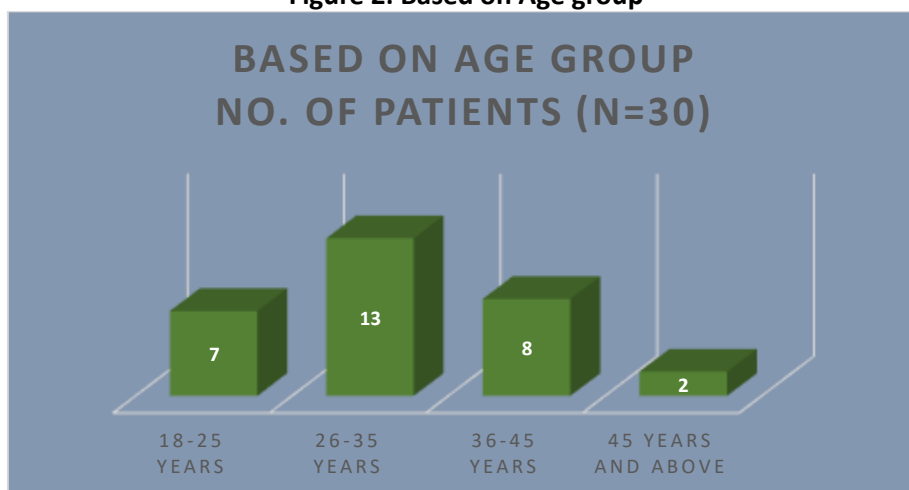
Out of 30 patients, 7 patients in age group 18-25 years, 13 patients in age group 26-35 years, 8 patients in age group 36-45 years and 2 patients were above 45 years of age which was shown in Table 2 and figure 2.

Table 2: Based on Age group

Age in years	No. of patients (n=30)
18-25 years	7
26-35 years	13
36-45 years	8
45 years and above	2

2776

Figure 2: Based on Age group



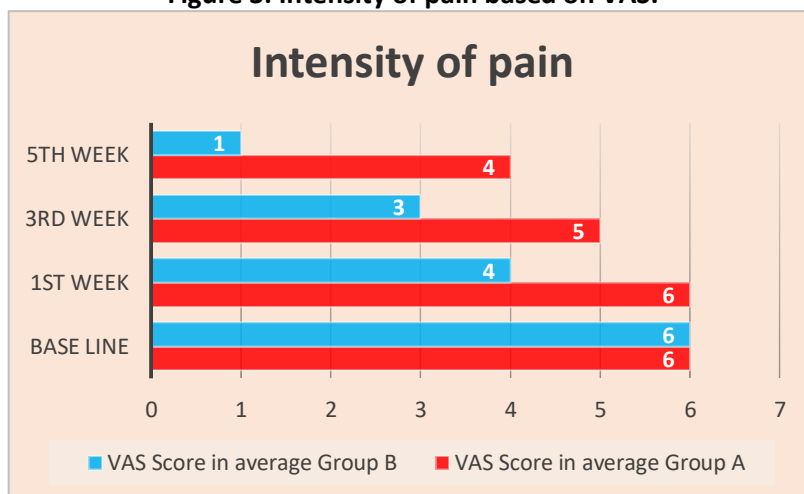
The patients (n=30) were categorized into Group A (n=15) and Group B (n=15). Group A patients received standard treatment whereas Group B patients received both the standard treatment and vitamin E oral supplementation. The standard treatment includes local anesthetic ointment and laxative. The intensity of pain was assessed using visual analogue score and the effectiveness of vitamin oral supplementation was observed in vitamin E levels at baseline, 1st, 3rd and 5th weeks respectively.

At baseline, the average range of intensity of pain was 6, at 1st week the VAS score was 6 in Group A and 4 in Group B, at 3rd week 5 in Group A and 3 in Group B and at 5th week 4 in Group A and 1 in Group B which was shown in Figure 3. The results showed that the patients in Group B (treated with standard and oral Vitamin E



supplementation) showed good decrease in the intensity of pain when compared with Group A (standard treatment).

Figure 3: Intensity of pain based on VAS.



2777

Based on Vitamin E levels, the average level at base line was 5 in Group A and 4.1 in Group B, followed by 5 in Group A and 4.5 in Group B at 1st week, 4.8 in Group A and 5.6 in Group B at 3rd week, and 4.7 in Group A and 7 in Group B at 5th week respectively which was shown in Figure 4.

Figure 4: Effectiveness of vitamin E based on Vitamin E levels



Conclusion:

This study concluded that the vitamin E levels increased and the intensity of pain has reduced after receiving vitamin E oral supplementation along with standard treatment which was a good sign for its effectiveness in haemorrhoids. Furthermore studies are needed on a larger scale to support this data/study.

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