Correlation Is Not Suitable for Comparison of Outcomes

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We have read the article comparing the role of hemorrhoidectomy and rubber band ligation in patients with second- and third-degree hemorrhoids by Gagloo et al. [1] with interest. Hemorrhoidal diseases account for bulk of the patients attending the surgical clinics. A wide array of management options are available for this common ailment that range from simple lifestyle modification to invasive excisional hemorrhoidectomy. The selection of appropriate management strategy depends on the classification of hemorrhoids. Higher degrees of hemorrhoids often necessitate more invasive interventions. Recently, efforts are being made to extend the benefits of minimal invasive methods to more and more patients with higher degree hemorrhoids.

We beg to differ on the issue of assignment of patients into different degrees on the basis of proctoscopic examination. The Goligher classification of hemorrhoids takes into account the clinical presentation of the hemorrhoid mass, particularly the extent of prolapse. This can be ascertained by specific enquiry regarding the extent of prolapse as well as confirmation of the same on visual inspection of the perianal area when the patient is requested to strain. Proctoscopy is an integral component of the evaluation process of hemorrhoids as internal hemorrhoids are always better seen than felt. Proctoscopy helps in documentation of the number, location, and appearance of the hemorrhoid mass. It also identifies coexistent lesions in the anorectum in need of intervention along with the hemorrhoids.

The authors have compared postoperative complication rate and overall patient satisfaction level for evaluation of both the treatment modalities. Hemorrhoidectomy resulted in en-

hanced postoperative pain but reduced incidence of prolapse and bleeding episodes in comparison to rubber band ligation. The satisfaction level was reported to be higher in patients undergoing hemorrhoidectomy. We feel that selection of Chi-square test or Fisher exact test instead of correlation analysis would have better suited to this scenario.

Correlation points to the extent of mutual relationship between two or more variables. Change in one variable is thus expected to bring about certain changes in the other variables. Increase in one variable in response to an increase in the other variable indicates a positive correlation while increase in one variable leading to decrease in the other variable denotes a negative correlation. The reduced incidence of prolapse and bleeding episodes following hemorrhoidectomy was associated with an increase in the satisfaction level pointing to a negative correlation. Correlation coefficient denotes the strength of correlation in either direction and varies between -1.0 and $+1.0$. The closer is this value to 1.0 , the stronger is the association. In this study, both reduced prolapse and reduced bleeding contributed to increased patient satisfaction. Had a proper correlation analysis with calculation of correlation coefficient undertaken, then the factor more closely related to the greater acceptability of hemorrhoidectomy could have been identified.

In conclusion, appropriate selection of statistical tests to complement documented observations is absolutely essential as they add reliability and respectability to conclusions.

Reference

1. Gagloo MA, Hijaz SW, Nasir SA, Reyaz A, Bakshi IH, Chowdary NA et al (2013) Comparative study of hemorrhoidectomy and rubber band ligation in treatment of second and third degree hemorrhoids in Kashmir. Indian J Surg 75(5):356–360

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