***P* Value <0.05. Is It Always Worth the Chase?**

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We have read with interest the article outlining the role of laparoscopic appendectomy (LA) in patients with chronic right lower quadrant abdominal pain (CAP) by Teli et al. [1]. These patients are indeed quite commonly encountered in routine surgical practice. The consulting surgeon is often overwhelmed by the sheer volume of investigations that has already been ordered in an effort to establish the diagnosis.

The authors have advocated the use of LA as a successful management tool in properly selected patients with CAP. The basis of their recommendation rests on the finding of significant improvement in postoperative pain scores following LA, observed in 36/40 (96 %) patients with a *p* value <0.005. *P* value is the standard expression used in scientific articles to denote the level of statistical significance when the outcome of two or more groups is compared. For example, let us assume that the authors had envisaged this study with the assumption that the patients of CAP can be truly benefited by LA. So, we have a null hypothesis that states that LA does not improve pain in patients with CAP and an alternate hypothesis stating that LA does improve pain in these patients. Now, we have to be certain that if at all LA improves the pain then it should not be a mere coincidence or a chance occurrence. Herein lies the importance of *p* value. It is the probability of any observed difference occurring by chance. By convention, the significance of *p* value is set at a level of 0.05. This denotes that we accept the fact that maximum 5 out of 100 times the observed difference can occur by chance. So, if a *p* value is more than 0.05 that means the observed difference is more of a chance

finding rather than a true occurrence. In other words, the lower the *p* value, the lesser the probability that any observed difference has occurred by chance and there exist a truly significant difference in the outcomes.

The outcome of LA with respect to postoperative pain relief was quite impressive in this study but to support it with a *p* value <0.005 was uncalled for as there was no comparison group. We feel that had the authors included an additional subset of patients with CAP who were subjected to diagnostic laparoscopy sans appendectomy and reported the difference in the postoperative pain scores in both the groups with a *p* value, then the observation would have been more valid and trustworthy.

It is an established fact that a properly conducted trial without any significant difference in the outcome parameters is in no way inferior to a trial demonstrating significant difference in the observations. It is high time that we should put our obsession with the *p* value to rest and stop the chase for a significant *p* value when our study design does not allow for comparison of outcome parameters.

Reference

1. Teli B, Ravishankar N, Harish S, Vinayak CS (2013) Role of elective laparoscopic appendectomy for chronic right lower quadrant pain. Indian J Surg 75(5):352–355

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