

LETTERS

IN RESPONSE:

Although we thank the author(s) for their interest in our analysis of the relative merits of anterior *versus* posterior approaches to surgically address degenerative cervical myelopathy, we find it very surprising that the author(s) of the letter (reference no. SPINE 130510LTE) question(s) the validity of the statistical methods and reporting techniques used in our study. With this response, we address all of the points raised regarding our article, which was formulated using the most rigorous methodology.

The number of subjects included in various analyses is clearly described in the “Materials and Methods” section and leaves no room for misunderstanding. Our follow-up rate of 87% at 12 months is acceptable by any statistical standards. For example, a follow-up rate of 60% to 80% is deemed to be acceptable for cohort studies.¹ Attrition of up to 20% is commonly viewed as tolerable even in randomized controlled trials.² Referring to the statistical imputation of missing data as a “fabrication” of data unfortunately reflects a limited understanding of commonly applied and widely accepted statistical methodology. We refer the author(s) of the letter to any of a number of standard references related to imputation of missing data points.³

Our study does not involve “pulling all their patients into single cohort” as claimed by the letter author(s). The core of our study is a comparison between anterior and posterior “cohorts” to treat degenerative cervical myelopathy. The statement that “our data come from a type of probability distribution that makes parametric tests not applicable” is purely speculative and factually incorrect. Our article provides no information that would allow the letter author or any reader to verify the probability distribution of outcome variables. An experienced scholar would, however, be familiar with the fact that Neck Disability Index and Short Form (36) Health Survey demonstrate symmetric distributions as shown with thousands of publications using these outcomes. Furthermore, a well-versed statistician would be able to make better judgments about the underlying distributions from the measures of variability presented through our article.

Fully informed consent has been obtained from all patients in the study, which was undertaken with full Institutional Review Board approval and using the rigorous GCP (Good Clinical Practice) standards. Involvement of third-party professional monitors as described in the methods included verification of the regulatory aspects of the study.

The Manuscript submitted does not contain information about medical device(s)/drug(s).

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In summary, we stand by the methodology, results, and reporting of our study on “Anterior *vs.* Posterior Surgical Approaches to Treat Cervical Spondylotic Myelopathy: Outcomes of the Prospective Multicenter AOSpine North America Cervical Spondylotic Myelopathy Study in 264 Patients,” which was conducted using the most rigorous of techniques and using GCP standards.

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References

1. Kristman V, Manno M, Côté P. Loss to follow-up in cohort studies: how much is too much? *Eur J Epidemiol* 2004;19:751–60.
2. Dumville JC, Torgerson DJ, Hewitt CE. Reporting attrition in randomized controlled trials. *BMJ* 2006;332:969–71.
3. Luo S1, Lawson AB, He B, et al. Bayesian multiple imputation for missing multivariate longitudinal data from a Parkinson's disease clinical trial [published online ahead of print December 12, 2012]. *Stat Methods Med Res.* doi:10.1177/0962280212469358.