

## Common Deficiencies in Clinical Researches of N Classifications for Gastric Cancer

### TO THE EDITORS:

Predicting accuracy of tumor staging systems is becoming more important as the concept of “personalized cancer care” gains hold because the best appropriate treatment strategy is determined by precise prognostic assessment. However, the latest number-based pN classification for gastric cancer can no longer meet the demands of personalized cancer care as a result of its poor prognostic accuracy, especially when insufficient nodes are retrieved. Indicators with more precise predicting power should be introduced, such as metastatic lymph node ratio (MLR) and log odds of positive lymph nodes (LODDS). As researchers in this area, we have found some common deficiencies in studies of N classifications for gastric cancer.

First, misuse of the Cox regression model still exists, despite its having been reported for years, even in articles published in *Cancer*, in which LODDS was misleadingly regarded as the only independent prognostic factor, but not pN or MLR, as a result of multistep multivariate analysis in which pN and MLR were removed but LODDS left when compared in one model.<sup>1,2</sup> However, all three classifications are independent prognostic factors according to the findings of our study; the reason that LODDS was retained and the other two removed is the result of their high similarity, not the differences between them. To avoid this, significant correlative indicators confirmed by Pearson’s or Spearman’s tests should be put into different models for multivariate analysis.

Second, misuse of crossed-table  $\chi^2$  test has been found in many clinical studies that are based on follow-up data, in which 5-year cumulative survival rate (5-YCSR) is widely

used for comparing prognostic differences. In fact, 5-YCSR could not indicate the real survival rate (5-YSR) as a result of censored values. In our experience, the Kaplan-Meier estimator might solve this problem and result in more useful findings for clinical practice because the log-rank pairwise test could identify differences between adjacent survival curves, regardless of 5-YSR or 5-YCSR.

Third, authors tend to pay attention to sample size but ignore its quality. Thus, introduction of bias often occurs during data collection. For example, if we combine gastric cancer patients in 2009 and those only with positive nodes in 2008 into one sample, although the sample size gets bigger, patients without metastatic nodes are omitted, which is considered bias and might result in misleading conclusion. Therefore, we should be more cautious and honest when we face the incoming tide of translational research.<sup>3</sup>

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### REFERENCES

1. Wang X, Wan F, Wang JJ. A common misuse of stepwise regression in studies of ratio of metastatic lymph nodes for gastric cancer. *Ann Surg Oncol*. 2008;15:1805–6.
2. Sun Z, Xu Y, Li de M, et al. Log odds of positive lymph nodes: a novel prognostic indicator superior to the number-based and the ratio-based N category for gastric cancer patients with R0 resection. *Cancer*. 2010;116:2571–80.
3. Johnson SM, Evers BM. Translational research in gastric malignancy. *Surg Oncol Clin N Am*. 2008;17:323–40.