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The wrong answer to the right question: Misinterpretation as "prognostic factor"

Doğru soru, yanlış cevap; "Prognostik faktör" gibi yorumlamak

To the Editor,

I read with great interest the article entitled "Prognostic significance of MUC1, MUC2 and MUC5AC expressions in gastric carcinoma" by İlhan et al. (1) that was published in the latest issue of the Turkish Journal of Gastroenterology. However, with this letter, I do want to share my objection about the message given with the title and the conclusion of the article, which, in my opinion, could not be derived from the performed statistical analysis.

Defining the prognostic factors in cancer is a key area of research, which would hopefully enable us to stratify patients more precisely according to their survival expectancy and hence the treatment modalities. The translational glossary in the Journal of Clinical Oncology website (2) defines a prognostic factor as "a measurable patient characteristic that is associated with the subsequent course of disease (whether or not therapy is administered). The identification of a prognostic factor does not necessarily imply a cause-and-effect relationship. However, within a suitable outcome model, the measurement of a prognostic factor contributes to an estimate of an outcome probability (e.g., the probability of disease-free survival within a given time interval)". The so-called "outcome model" here refers to the survival analysis, which is the sine qua non statistical procedure when we talk about predictive or prognostic factors. Not to mention that the reliability of this outcome model unquestionably needs an informed knowledge of statistics and of the disease of interest itself. Clearly, no survival analysis was done in the İlhan et al. study. Therefore, without a survival analysis, it is incorrect to give a message about the expression of MUC1, MUC2 and MUC5AC as prognostic factors in gastric adenocarcinoma, even if they had a correlation with the well-known prognostic factors for this disease or had been found to have an effect on prognosis in the previous studies.

As a last word, as researchers in the field of medicine, we remind ourselves once again that pre-analysis hypotheses should be subjected to well-designed experiments and/or statistical tests before reaching and spreading conclusions, which may mislead the scientific community.

REFERENCES

1. İlhan Ö, Han Ü, Önal B, Çelik SY. Prognostic significance of MUC1, MUC2 and MUC5AC expressions in gastric carcinoma. Turk J Gastroenterol 2010; 21: 345-52.

2. http://jco.ascopubs.org/cgi/glossarylookup

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To the Editor

We thank Dr. Öztürk for his interest in our article and his valuable input.

In this study, the term prognostic significance has been used for the statistical relation itself between expression scores and immunohistochemical reagents of MUC1, MUC2, MUC5AC. We could also have made use of survival analysis, however we had no hesitation to use the term "prognostic factors" since expressions of MUC1, MUC2, MUC5AC displayed a correlation with other well known prognostic factors. Further, an effect of MUC1, MUC2, MUC5AC on prognosis has also been reported in previous studies. The p value of our Chi-square test applied allows us to use the term 'significance' as seen in the attached book provided by Dr. Öztürk.

Best regards,
Binnur ÖNAL, MD
on behalf of all authors

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