circGSAP: A New Clinical Biomarker for Idiopathic Pulmonary Hypertension?

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To the Editor:

We read with interest the recent paper published by Yuan et al. [1]. Their find that lower circGSAP level is associated with the occurrence and poor prognosis of idiopathic pulmonary hypertension (IPAH). circGSAP may be an emerging biomarker for the diagnosis and prognosis of IPAH. We first congratulate the author for clarifying the correlation between them for the first time, which provides a new direction for our diagnosis and treatment of IPAH. This is an important field, but the relationship between them has not yet been fully studied.

As we all know, patients with pulmonary arterial hypertension (PAH) have a poor prognosis if they are not diagnosed early and receive adequate treatment [2]. However, the current main approach for diagnosis and treatment of IPAH is based on invasive hemodynamics and subjective parameters [3]. This brings great inconvenience to the diagnosis and treatment of IPAH in many places, and even delays the condition of IPAH. In addition, in current clinical practice, there are only three drugs for PAH, including nitric oxide-cyclic guanosine monophosphate pathway, prostacyclin pathway, and endothelin pathway, and the efficacy is not ideal [2].

The research results of Yuan et al. [1] provide a new direction for solving this problem, and we affirm the author's contribution in this regard. With the development of high-throughput sequencing technology and bioinformatics, more and more data show that circRNA plays an important role in regulating gene expression [4]. The expression profile of circRNA has been analyzed in the context of many diseases such as tumor, hypertension, cardiovascular disease, pulmonary fibrosis, pulmonary tuberculosis, and acute lung injury, which has a great impact on the diagnosis and treatment of these diseases [3, 4]. As far as we know, circRNA is a kind of epigenetic modifier, and their disorder is related to the pathogenesis of the disease. It has attracted extensive attention as a biomarker.
or therapeutic target\cite{3-6}. From the experimental results at the clinical, cellular and animal levels, the studies of Yuan et al.\cite{1} have well proved that the lower circGSAP level is related to the occurrence and poor prognosis of IPAH. Therefore, the relationship between circRNA and IPAH is worthy of further study.

However, there are still some problems in the research of Yuan et al.\cite{1}. The comparison between the control group and the experimental group in the clinical baseline of the patient did not list the P value, and it is not known whether the statistical difference is significant. In order to minimize the influence of other factors, we should try to match common demographic characteristics, and even control related covariates in multivariate regression analysis.

In a word, although the research of Yuan et al.\cite{1} still has some limitations, it is undeniable that their research has opened a new situation for our diagnosis and treatment of IPAH. We suggest that the authors perform enrichment analysis on the differential expression screened in the article to provide relevant signal pathways, which will provide great convenience for the subsequent research on mechanisms and therapeutic targets. In addition, the author has calculated the the ROC curve area of circGSAP, but its predictive value is not very high. It can be combined with other meaningful indicators to build a model, and even machine learning methods can be used to analyze and choose a more appropriate model to predict IPAH, which may make this research more meaningful. Finally, we suggest to expand the sample size and multi-center to further verify, so as to provide evidence for clinical practice.
References


