

Fluorescence monitoring and prediction of therapeutic effect of photodynamic therapy for port wine stains

It is known that fluctuations in the treatment outcome of photodynamic therapy (PDT) between patients are related to the concentration of photosensitizer in the target tissue. The purpose of a study, by Wang *et al.*, published on page 175 of this issue of *Experimental Biology and Medicine* was to establish a fluorescence method not only providing a semi-quantitative measurement of photosensitizer concentration but also predicting the efficacy of PDT for port wine stains (PWS).

This work was conducted by Ying Wang and Xiaohua Liao when they were postgraduate students under the direction of Professor Ying Gu and Professor Rong Chen, and colleagues in the Department of Laser Medicine at the Chinese People's Liberation Army General Hospital. Currently, Ying Wang is a physician at Chinese PLA General Hospital and Xiaohua Liao works at Fujian Metrology Institute. An algorithm which can yield a semi-quantitative measurement of photosensitizer concentration was established in this study.

Then a therapeutic effect correlation index (TECI) was proposed as the area under the photosensitizer concentration-time curve during PDT. The correlation between TECI and PDT treatment outcome was analyzed from 31 PWS patients at the Chinese People's Liberation Army General Hospital.

Dr Wang noted that 'A non-invasive fluorescence method that can monitor photosensitizer concentration during PDT for PWS was established, and a therapeutic effect correlation index (TECI) was verified to be positively correlated with PDT outcome for the first time in this paper.'

Dr Steven R Goodman, Editor-in-Chief of *Experimental Biology and Medicine* said 'The results of the study by Wang *et al.* suggest that fluorescence spectroscopy can be used *in situ* to monitor skin photosensitizer concentration during PDT. This may provide a valuable diagnostic tool to predict PDT outcome.'

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