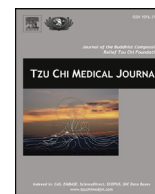


Contents lists available at [SciVerse ScienceDirect](#)

# Tzu Chi Medical Journal

journal homepage: [www.tzuchimedjnl.com](http://www.tzuchimedjnl.com)

## Letter to the Editor

### Pirfenidone could decrease paraquat-induced pulmonary fibrosis in rats

To the Editor,

I read with interest the following recently published article in your journal "Can pirfenidone prevent paraquat-induced pulmonary fibrosis? – A hypothesis" [1].

I am writing to present the results of our recently published study which surprisingly tried to answer the same question [2]. In an experimental animal study, we compared the efficacy of pirfenidone with that of conventional antioxidants in preventing pulmonary fibrosis and increasing the survival of rats with acute paraquat poisoning. In our study (first presented at the 10<sup>th</sup> Lung Science Conference, April 2012, Estoril, Portugal) [3], pirfenidone decreased paraquat-induced lung fibrosis ( $p < 0.001$ ) despite the fact that antioxidants did not ( $p < 0.413$ ). The increase in the survival of pirfenidone -treated rats was insignificant compared with the antioxidant- treated group. This study showed that pirfenidone is able to decrease pulmonary fibrosis following paraquat poisoning in a rat model.

With respect to our findings, it seems that treatment with pirfenidone might decrease pulmonary fibrosis due to paraquat poisoning in rats. In addition, the anti-inflammatory properties of pirfenidone [4–6] may also decrease the acute complications of paraquat poisoning. Larger animal studies and clinical investigations are needed to investigate further the efficacy of pirfenidone in paraquat poisoning.

Future clinical trials are necessary to approve pirfenidone in the treatment protocol of patients with paraquat poisoning. Moreover, it would be interesting to know whether higher doses

or longer periods of treatment with pirfenidone increase its efficacy.

#### References

- [1] Sanaei-Zadeh H. Can pirfenidone prevent paraquat-induced pulmonary fibrosis? –A hypothesis. *Tzu Chi Med J* 2012;24:223.
- [2] Seifrad S, Keshavarz A, Taslimi S, Aran S, Abbasi H, Ghaffari A. Effect of pirfenidone on pulmonary fibrosis due to paraquat poisoning in rats. *Clin Toxicol (Phila)* 2012;50:754–8.
- [3] Seifrad S. PP150: effect of pirfenidone on pulmonary fibrosis due to paraquat poisoning in rats. Available at: [http://www.expertoenbronquiectasias.com/img/eventos/1203\\_ers10th-lung.pdf](http://www.expertoenbronquiectasias.com/img/eventos/1203_ers10th-lung.pdf) [accessed 23.01.13].
- [4] Giri SN, Leonard S, Shi X, Margolin SB, Vallyathan V. Effects of pirfenidone on the generation of reactive oxygen species *in vitro*. *J Environ Pathol Toxicol Oncol* 1999;18:169–77.
- [5] Salazar-Montes A, Ruiz-Corro L, Lopez-Reyes A, Castrejon-Gomez E, Armentariz-Borunda J. Potent antioxidant role of pirfenidone in experimental cirrhosis. *Eur J Pharmacol* 2008;595:69–77.
- [6] Bus JS, Gibson JE. Paraquat: model for oxidant-initiated toxicity. *Environ Health Perspect* 1984;55:37–46.

Soroush Seifrad\*  
Endocrinology and Metabolism Research Center,  
Shariati Hospital, Tehran, Iran

\* Corresponding author. Endocrinology and  
Metabolism Research Center, Shariati Hospital,  
North Kargar Street, Tehran 1411413137, Iran.  
Tel.: +98 93 55 79 99 79.  
E-mail address: [sseifrad@gmail.com](mailto:sseifrad@gmail.com)