Letters to the Editor

European Journal of Gastroenterology & Hepatology 2011, **23**:193–196

Protective effect of *N*-acetyl cystein on antituberculosis drug-induced hepatotoxicity

Levent Filik, Ankara Research Hospital, Gastroenterology Clinic, Ankara, Turkey

Correspondence to Dr Levent Filik, Ankara Research Hospital, Gastroenterology Clinic, Ankara 06600, Turkey
Tel/fax: +90 312 5954272; e-mail: leventfilik@yahoo.co.uk

Received 26 October 2010 **Accepted** 28 October 2010

I read the recent article by Baniasadi *et al.* [1] with a special interest. The article has important outcomes related to a potential protective role of *N*-acetyl cystein (NAC) against hepatotoxicity of antituberculosis (anti-TB) drugs. But, there are some issues that need to be clarified. First issue of my concern is the treatment durations and results of anti-TB therapy. First 2–3 weeks is not enough to say that transaminases will not increase. Second issue is the study design. I think that the patients with elevated transaminases should have taken NAC to observe any protective effect, instead of gradual use of anti-TB drugs. Although the authors stated that acetylator status distribution in Iranians showed a considerable prevalence of slow acetylators over rapid acetylators, in group 2 there is no transaminase elevation. How could the authors eliminate the open-label-study effect on the second group? I think the optimal strategy for prevention of severe hepatotoxicity is still obscure and, as we all know, baseline and monthly clinical and biochemical monitoring is the only way in patients, who require isoniazid (INH) therapy because early detection of INH hepatitis and discontinuation of INH, to prevent severe sequelae. In contrast, NAC may take place in anti-TB treatment regimes because of immunological effects, as NAC was shown to tailor macrophages to induce enhanced Th1 response that may be helpful to control tuberculosis [2].

References

1 Baniasadi S, Eftekhari P, Tabarsi P, Fahimi F, Raoufy MR, Masjedi MR, Velayati AA Protective effect of *N*-acetyl cystein on antituberculosis drug induced hepatotoxicity. *Eur J Gastroenterol Hepatol* 2010; **22**:1235–1238.
2 Alam K, Ghousunnissa S, Nair S, Valluri VL, Mukhopadhyay S. Glutathione-redox balance regulates c-rel-driven IL-12 production in macrophages: possible implications in antituberculosis immunotherapy. *J Immunol* 2010; **184**:2918–2929.

Protective effect of *N*-acetyl cystein on antituberculosis drug-induced hepatotoxicity

Shadi Baniasadi, Virology Research Center, National Research Institute of Tuberculosis and Lung Disease, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Correspondence to Shadi Baniasadi, PhD, National Research Institute of Tuberculosis and Lung Disease, Darabad, Niavaran, Tehran 1955841452, Iran
Tel: +98 21 26109503; fax: +98 21 26109484; e-mail: sbaniasadi@yahoo.com

Received 3 November 2010 **Accepted** 8 November 2010

Author's reply:

N-acetylcystein (NAC) was administered for the first 2 weeks of treatment as earlier studies in our country had shown that hepatotoxicy of antituberculosis (anti-TB) drugs most often occur during this period [1,2]. The purpose of our study was not to determine the results of anti-TB therapy. We agree that adding NAC to anti-TB treatment regimens owing to improving host–immune responses should be investigated in future studies.

As there were no published data regarding the protective effect of NAC against hepatotoxicy induced by anti-TB drugs in humans, administration of NAC to the patients with elevated transaminases (instead of gradually re-introducing anti-TB drugs) was not in accordance with ethical considerations.

For our limitations, this study was designed as an open-label study [3]. A future double-blind study could eliminate this effect.

References

1 Sharifzadeh M, Rasoulinejad M, Valipour F, Nouraie M, Vaziri S. Evaluation of patient-related factors associated with causality, preventability, predictability and severity of hepatotoxicity during antituberculosis treatment. *Pharmacol Res* 2005; **51**:353–358.
2 Baghaei P, Tabarsi P, Chitsaz E. Incidence, clinical and epidemiological risk factors, and outcome of drug-induced hepatitis due to antituberculous agents in new tuberculosis cases. *Am J Ther* 2009; **17**:17–22.
3 Baniasadi S, Eftekhari P, Tabarsi P, Fahimi F, Raoufy MR, Masjedi MR, *et al.* Protective effect of *N*-acetyl cystein on antituberculosis drug induced hepatotoxicity. *Eur J Gastroenterol Hepatol* 2010; **22**:1235–1238.

Drawing the wrong conclusions?

Christine Houghton, University of Queensland, St Lucia, Queensland, Australia

Correspondence to Christine Houghton, BSc, Grad Dip Hum Nutr, PhD Cand, University of Queensland, Blair Drive, St Lucia, Queensland 4067, Australia
Tel: +61 73 4880385; fax: +61 73 4880389;
e-mail: christine.houghton@uqconnect.edu.au; christine.houghton@cell-logic.com.au

Received 11 October 2010 **Accepted** 21 October 2010

In relation to the letter to the editor by Ekiz *et al.* on page 898 of the July 2010 issue of the journal, an assumption is made that the broccoli juice *per se* was responsible for hepatotoxicity. It is not known what other hepatotoxic compounds were associated with the juice the woman may have consumed. Broccoli juice (800 ml) would have

0954-691X © 2011 Wolters Kluwer Health | Lippincott Williams & Wilkins DOI: 10.1097/MEG.0b013e32834205c6