

LETTER TO THE EDITOR

Response to Letter: Anaphylactoid reactions to NAC

To the Editor:

In the letter, the particular Danish practice of treating all patients without any risk stratification is questioned. In most countries, the decision to treat with N-acetylcysteine (NAC) is based on modifications of the plasma concentration versus time since overdose nomogram originally suggested by Prescott and Rumack.¹ However, use of the nomogram is not without problems.

Firstly, the information from the patient regarding the time of the overdose needs to be accurate in order to estimate the risk correctly. Secondly, the choice of treatment line ('standard' or 'high-risk') is based on knowledge of individual risk factors that are believed to enhance the patient's risk of liver damage. These risk factors typically include regular alcohol abuse, ingestion of enzyme-inducing drugs, malnutrition, and HIV infection. Whereas the basis for some of these risk factors is rather theoretic, other potentially important factors (e.g. age) have not been included, and extreme genetic variation is not considered.² Thirdly, the nomogram may be misinterpreted causing NAC to be withheld in patients meeting the treatment requirements. In one study, this was the case in as many as 142 out of 560 patients (25%).³ Another study described 11 fatal cases in which NAC was incorrectly withheld.⁴ Fourthly, even with correct use of the nomogram, liver injury regularly develops in 'low risk' patients.¹ One study has even described four deaths (one following liver transplantation) in 'low risk' patients, all of which would have been completely preventable if a relevant and timely course of NAC had been administered.⁵

Based on the above considerations, I conclude that use of the nomogram is associated with otherwise preventable fatality, either because the nomogram is imperfect or because it is

misapplied. In Denmark, the use of the nomogram has been considered obsolete since 1996, and the official recommendation is to treat all patients regardless of risk estimation. Even though this point has recently been debated in Denmark, it was still decided that treating all patients was the only way to absolutely ensure that no one develops acute liver failure from paracetamol overdose due to withheld or unnecessarily delayed NAC treatment. In further favour of the Danish recommendation, NAC treatment is simpler and safer, and the costs involved are less when compared to the costs of treating patients with acute liver failure or the cost of liver transplantation.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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