LETTER

Dosing azathioprine in thiopurine *S*-methyltransferase deficient inflammatory bowel disease patients

With great interest we read the article by Kaskas *et al* (*Gut* 2003;**52**:140–2) about safe treatment of thiopurine *S*-methyltransferase (TPMT) deficient Crohn's disease patients with azathioprine (AZA). In this paper it is illustrated that TPMT-deficient patients can be successfully treated with very low doses of AZA (~10% of standard initial dose).

Unfortunately, this is not the case for all homozygous mutant TPMT allele carriers. This is demonstrated by the case report of an exceptional thiopurine *S*-methyltransferase deficient patient with inflammatory bowel disease who we identified recently. A 19-year-old man with ulcerative colitis who was attending the outpatient clinic was treated with AZA 150 mg once daily and cyclosporine 150 mg twice daily and developed severe pancytopenia (leukocyte count, 0.8×10^9/l; thrombocyte count, 44×10^9/l; haemoglobin, 4.5 mmol/l) and sepsis consequently 2 months after start of treatment. Both drugs were discontinued immediately. After long-term hospitalisation the patient was discharged and after normalisation of 6-thioguanine nucleotides (6-TGNs) levels and blood cell counts, AZA was carefully restarted at a 25 mg daily dosage with frequent monitoring. After 2 weeks AZA was discontinued because of a decrease in leukocyte (3.7×10^9/l) and thrombocyte (66×10^9/l) counts. Cyclosporine and steroids were administered but had no clinical effect. Two months later infliximab was started combined with AZA at an even lower dose of 12.5 mg once daily. Ten weeks thereafter, the patient developed leukopenia once again (leukocyte count 3.7×10^9/l) and AZA was discontinued once more. 6-TGN levels were as high as 969 pmol per 8×10^8 red blood cells (RBCs), the proposed therapeutic window being 250–500 pmol per 8×10^8 RBC. TPMT phenotyping revealed an intermediate metaboliser (0.76 pmol per 10^6 RBC/h), while TPMT genotyping surprisingly revealed a homozygous mutant (*3A/*3A). The patient is currently being treated successfully with infliximab monotherapy once every 8 weeks.

Three important lessons can be learned from this case. First, despite very low AZA dosing (approximately 5% of standard dose) this IBD patient with homozygous TPMT mutant alleles developed very high 6-TGN levels and leucopenia consequently. We totally agree with Kaskas *et al* that, in specific cases, TPMT deficiency in patients with inflammatory bowel disease (IBD) per se does not preclude thiopurine treatment and hence offers a further therapeutic option for this group of patients. This should be done with great caution, however; that is, with very frequent blood tests and 6-TGN monitoring, as in some cases even a 5% starting dose can be dangerous.

Second, although TPMT genotype and phenotype normally show very high correlations,[1] there are exceptional cases. In our case, 6-TGN levels were a far better predictor of TPMT deficiency than was TPMT activity.

Third, despite the TPMT *3A/*3A genotype, it lasted 2 months before leucopenia developed on a standard AZA dose in our patient. This is very unusual as most patients with homozygous TPMT mutant alleles develop myelotoxicity 1–2 weeks after starting standard thiopurine treatment.[2 3] A longer period of very frequent monitoring is advisable when thiopurine treatment is started in homozygous TPMT mutant carriers. This rare group of patients should be treated with the greatest caution.

L J J Derijks,[1] R B van Helden,[2] D W Hommes,[2] P C Stokkers[3,4]

[1] Department of Clinical Pharmacy, Máxima Medical Center, Veldhoven, The Netherlands; [2] Department of Gastroenterology & Hepatology, Leiden University Medical Center, Leiden, The Netherlands; [3] Department of Gastroenterology & Hepatology, Academic Medical Center, Amsterdam, The Netherlands

Correspondence to: Dr Luc J J Derijks, Department of Clinical Pharmacy, Máxima Medical Center, PO Box 7777, 5500 MB Veldhoven, The Netherlands; l.derijks@mmc.nl

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CORRECTIONS

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Dusheiko G, Antonakopoulos N. Current treatment of hepatitis B. (*Gut* 2008;**57**:105–24).

There are several mistakes in this article. (1) In the section "Major patterns of chronic hepatitis", under the heading "HBeAg positive chronic hepatitis B", the sentence "Spontaneous seroconversion rates remain relatively low in this group at approximately 20% at one year" should read "at 5–15%". (2) In table 1, reference 48 should be reference 50 and reference 83 should be reference 111. (3) In table 2, reference 50 should be 52 and reference 83 should reference 111. (4) Also in table 2, the entecavir 0.5 mg resistance rate in HBeAg negative patients is 0–1%, not 8%.

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Persiani R, Biondi A, Larocca L, *et al*. Intussusception in a 51-year-old male. (*Gut* 2008;**57**:242). In this article the third author's name was published incorrectly as Luigi L: it should be Larocca L.

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