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Relevance of oxidative stress for small intestinal injuries induced by nonsteroidal anti-inflammatory drugs: A multicenter prospective study

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Abstract

Several reports revealed that oxidative stress was involved in the mouse model of nonsteroidal anti-inflammatory drug (NSAIDs)-induced small intestinal mucosal injuries. Thus, we aimed to investigate in the prospective clinical study, that the relevance of oxidative stress balance in small intestinal mucosal injury in NSAIDs users. We prospectively included 60 patients who had been taking NSAIDs continuously for more than 3 months and exhibited obscure gastrointestinal bleeding (number UMIN 000011775). Small intestinal mucosal injuries were assessed by capsule endoscopy (CE), and reactive oxygen metabolites (d-ROMs) levels and oxidant capacity (OXY) adsorbent test were performed to investigate the relevance of oxidative stress balance. More than half of the patients (N = 32, 53%) had small intestinal mucosal injuries by CE, and 14 patients (24%) had ulcers. The incidence of ulcers was relatively higher in nonaspirin users. Serum OXY levels were significantly lower in the mucosal injury group (P = .02), and d-ROM levels were significantly higher in the ulcer group (P < .01). In aspirin users, d-ROM and OXY levels did not differ significantly with respect to mucosal injuries or ulcers. However, in nonaspirin users, OXY level was significantly lower in the mucosal injury group (P = .04), and d-ROM levels were significantly higher in the ulcer group (P = .02). Nonaspirin NSAIDs-induced intestinal mucosal injury is associated with antioxidant systems, resulting in increased oxidative stress.

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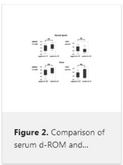
The authors have no funding and conflicts of interest to disclose.

Figures

Figure 1. Comparison of serum d-ROM and...



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