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Multidrug resistance gene and its relationship to ulcerative colitis and immune status of ulcerative colitis

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ABSTRACT. We examined the relationship among the multidrug resistance (*MDR1*) gene product P-glycoprotein (P-gp), ulcerative colitis, and immune status under ulcerative colitis. MDR1 P-gp expression and interleukin-8 levels in ulcerative colitis were determined using immunohistochemistry and a double-antibody sandwich avidin-biotin complex-enzyme-linked immunosorbent assay, respectively. Nitric oxide content and nitric oxide synthase activity in the colonic mucosa were determined using a colorimetric method; $CD4^+$ and $CD25^+$ T cell subset percentages in the peripheral blood were determined by flow cytometry. The positive expression rate of P-gp in patients with ulcerative colitis (17.4%) was significantly lower than that in the control group (31.4%). The expression rate decreased to 10.1, 9.2, and 8.3% after 12, 18, and 24 months of treatment, respectively, which were significantly lower than the expression rate before treatment (17.4%). P-gp expression levels during the remission phase and active phase

of ulcerative colitis were 15.2 and 17.1%, respectively, which were significantly lower than that in normal controls (31.4%). Compared with P-gp-negative patients, nitric oxide content, nitric oxide synthase activity, and interleukin-8 levels were significantly higher in P-gp-positive patients with moderately active, severely active, early onset, chronic relapsing, chronic persistent, and acute fulminant ulcerative colitis. $CD4^+$ and $CD25^+$ T cell subsets were significantly lower in the peripheral blood of patients with severely active and acute fulminant ulcerative colitis than in control subjects. Expression of the multidrug resistance gene and its product P-gp was observed in normal colon tissues and may be closely related to ulcerative colitis.

Key words: Colitis; Drug resistance; Immune status; NOS activity; IL-8; $CD4^+$ and $CD25^+$ T cells

