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Immunologic Mechanism in Sulphasalazine-Induced Agranulocytosis

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Sulphasalazine-induced agranulocytosis is a rare complication related to an individual susceptibility which could be of metabolic or immunologic nature [1]. Although early reports described the presence of leuco-agglutinins, these studies were not confirmed and in more recent cases no immunologic studies were done [1].

We studied a 41-year-old woman with ulcerative colitis who was treated with sulphasalazine 3 g/day for the first time and developed a severe agranulocytosis complicated by Escherichia coli sepsis (WBC = 1,000/mm³, neutrophils = 0%, lymphocytes = 92%, Hb = 10.5 g %, platelets = 450,000/mm³). The patient recovered fully from the agranulocytosis in about 4 weeks.

Lymphocyte sensitization to sulphasalazine was studied by analysing in vitro proliferation of peripheral blood lymphocytes from the patient in response to different concentrations of the drug as described before [2]. Significant lymphocyte reactivity was recorded (stimulation index > 2.0) for 3 out of the 5 concentrations tested (baseline without drug = 2,034 cpm, 0.5 µg/ml = 4,111 cpm, 5 µg/ml = 3,845 cpm, 15 µg/ml = 5,063 cpm, 60 µg/ml = 4,151 cpm, 200 µg/ml = 2,213 cpm). Lymphocytes from a

healthy control studied simultaneously showed no proliferation in response to the drug.

To our knowledge, this is the first case of sulpha-salazine-associated agranulocytosis where evidence of lymphocyte sensitization to the drug was documented. This is consistent with the hypothesis of a cell-mediated mechanism being involved in sulphasalazine-induced agranulocytosis.

References

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