METHOTREXATE POLYGLUTAMATE CONCENTRATIONS IN TARGET COLONIC MUCOSA, AND WHITE BLOOD CELLS COMPARED TO NON-TARGET RED BLOOD CELLS OF PATIENTS WITH CROHN'S DISEASE

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First measurement of methotrexate polyglutamates in intestinal mucosa and white blood cells of Crohn's disease patients reveals distinct distribution patterns across tissue types, with three-fold higher MTX-PG3 concentrations in effector cells compared to red blood cells.

KEY POINTS

- MTX-PG1-6 were successfully measured in intestinal mucosa and MTX-PG1-4 in PBMCs from 80 Crohn's disease patients treated with subcutaneous methotrexate in a 12-month prospective cohort study
- MTX polyglutamate concentrations were substantially higher in PBMCs than red blood cells, with MTX-PG1 18-fold higher, PG2 12-fold higher, and PG3 3-fold higher
- The prevalence pattern of MTX-PG species differed across matrices: PG1 was most abundant in mucosa and PBMCs, whereas PG3 was most abundant in red blood cells
- After MTX discontinuation, a rapid decline of MTX-PGs occurred in PBMCs but not in mucosa or red blood cells, with short-chain polyglutamates decreasing significantly faster than long-chain species
- Whether MTX-PG3 measured in PBMCs or intestinal mucosa shows a concentration-effect relationship in Crohn's disease remains unknown

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