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Agalactosyl IgG in inflammatory bowel disease: correlation with C-reactive protein.

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The proportion of oligosaccharide chains on the Fc fragment of IgG which terminate with N-acetylglucosamine (GlcNAc) rather than galactose is increased in rheumatoid arthritis and tuberculosis, and in sera from patients with Crohn's disease, probably because of decreased activity of a galactosyltransferase in B lymphocytes. We have assayed the prevalence of agalactosyl oligosaccharides on IgG in sera from 67 patients with inflammatory bowel disease (32 ulcerative colitis and 35 Crohn's disease). The prevalence of agalactosyl IgG significantly increases in the majority of Crohn's patients (19/35 patients), and correlates with the level of C-reactive protein ($r = 0.79$), and inversely with the concentration of serum albumin. Sera from ulcerative colitis patients show less frequent (nine of 32) and less marked rises in agalactosyl IgG, and sera with high C-reactive protein values can contain normal levels. Thus in ulcerative colitis no correlation was seen between the two assays. The diseases in which the percentage of agalactosyl IgG is raised (rheumatoid arthritis, tuberculosis, Crohn's disease and some ulcerative colitis) are characterised by simultaneous T cell mediated granulomatous tissue damage, and acute phase responses. Levels are normal in less tissue damaging granulomatous conditions, including sarcoidosis, and leprosy (except during episodes of erythema nodosum leprosum). We suggest therefore that a raised percentage of agalactosyl IgG is a correlate of a particular type of T cell mediated pathology which may be relevant to the pathogenesis of inflammatory bowel disease.

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