Macrophage and dendritic cell subsets in IBD: ALDH+ cells are reduced in colon tissue of patients with ulcerative colitis regardless of inflammation - DTU Orbit (02/12/2018)

Disruption of the homeostatic balance of intestinal dendritic cells (DCs) and macrophages (MQs) may contribute to inflammatory bowel disease. We characterized DC and MQ populations, including their ability to produce retinoic acid, in clinical material encompassing Crohn’s ileitis, Crohn’s colitis and ulcerative colitis (UC) as well as mesenteric lymph nodes (MLNs) draining these sites. Increased CD14+DRint MQs characterized inflamed intestinal mucosa while total CD141+ or CD1c+ DCs numbers were unchanged. However, CD103+ DCs, including CD141+CD103+ and CD1c+CD103+ DCs, were reduced in inflamed intestine. In MLNs, two CD14+DC populations were identified: CD11c+HLADRhi and CD11c+HLADRint cells. A marked increase of CD11c+HLADRint DC, particularly DRintCD1c+ DCs, characterized MLNs draining inflamed intestine. The fraction of DC and MQ populations expressing aldehyde dehydrogenase (ALDH) activity, reflecting retinoic acid synthesis, in UC colon, both in active disease and remission, were reduced compared to controls and inflamed Crohn’s colon. In contrast, no difference in the frequency of ALDH+ cells among blood precursors was detected between UC patients and non-inflamed controls. This suggests that ALDH activity in myeloid cells in the colon of UC patients, regardless of whether the disease is active or in remission, is influenced by the intestinal environment.

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