CD14 hi HLA-DR dim macrophages, with a resemblance to classical blood monocytes, dominate inflamed mucosa in Crohn’s disease

Intestinal MΦ play an important role in maintaining gut homeostasis. However, little is known about these cells, their precursors, and their role in intestinal inflammation. Here, we characterize the CD14 mononuclear cell populations in intestinal mucosa and blood in patients with CD. Among the LP CD14+ MΦ, we identified three distinct HLA-DR+ -expressing subsets. Compared with uninflamed, inflamed mucosa contained a marked increase in the proportion of the CD14hi HLA-DRdim cellular subset. This subset resembled the classical blood monocytes with low CD16, HLA-DR, and CX3CR1 expression. Classical monocytes migrated efficiently toward CCL2 and released the highest levels of MMP-1 and proinflammatory cytokines when stimulated with immune complexes or LPS. Our findings strongly suggest that it is the classical and not the intermediate or nonclassical monocytes that are the precursors to the dominating intestinal CD14hi HLA-DRdim subset. This enhances our understanding of CD pathology and may provide new options in treatment.

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