Immune response in ulcerative colitis

Immunocellular characterization

MC. Bedmar - Universitat Autònoma de Barcelona, Barcelona, Spain

Introduction

Ulcerative colitis (UC) is an inflammatory bowel disease which starts in the rectum and extends proximally in the colon. It is characterized by periods of activation and remission of the symptoms. Microbiota switch on an abnormal immune responses in the intestinal mucosa by unknown reasons. Several reports have indicated that immune system is key in the ulcerative colitis. Recents studies have identified new cells that seem to be important in the pathogenesis of the disease, but more studies are needed. Although, few differences are found between animal models and humans so we should take it into consideration.

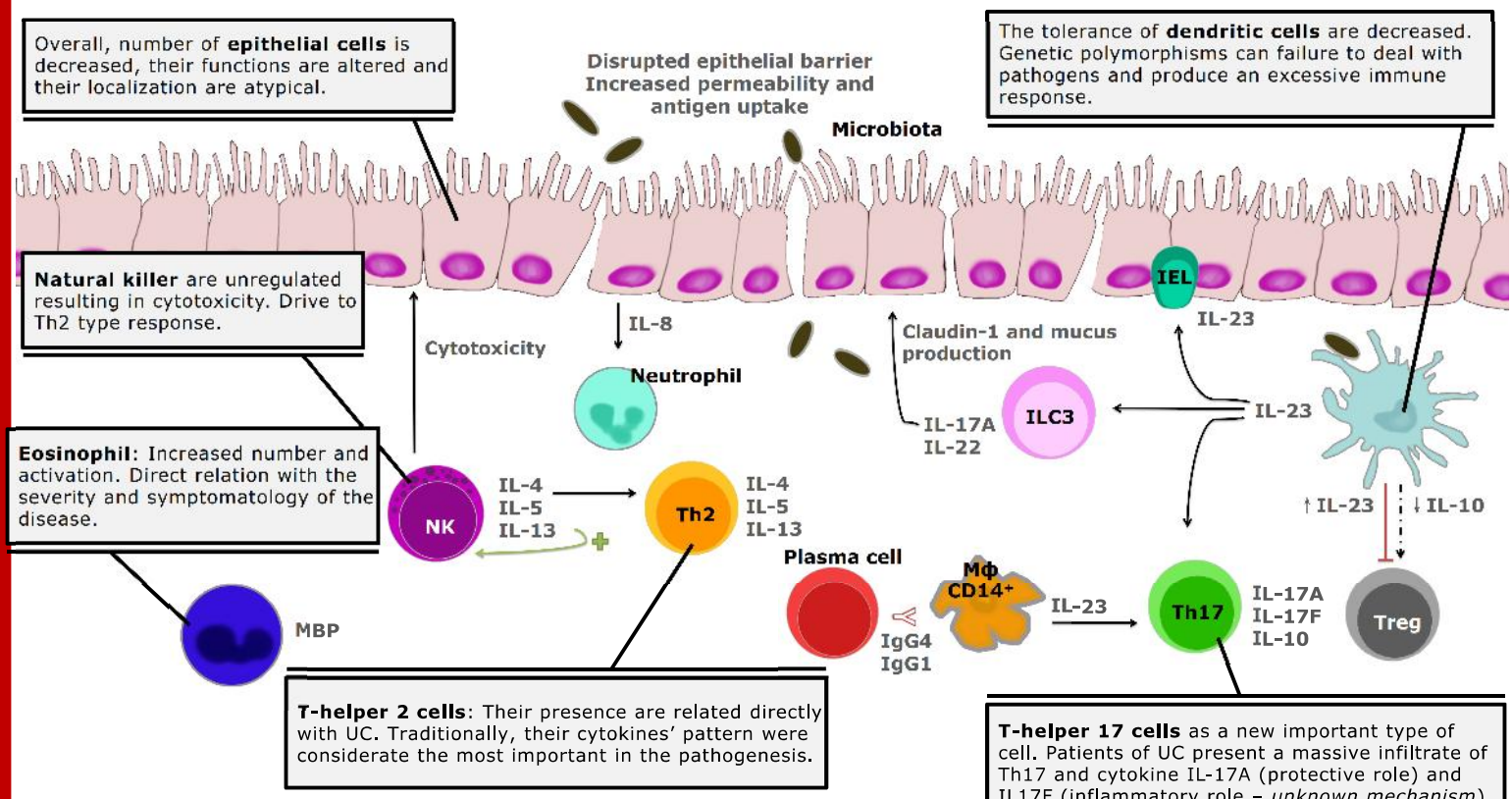
Aims

1. To study cells involved in ulcerative colitis, specially immune cells
2. To identify cytokines' pattern in ulcerative colitis
3. To value possible differences between humans and animal model
4. To establish the distinguishing pattern between active and remission phase

Methods

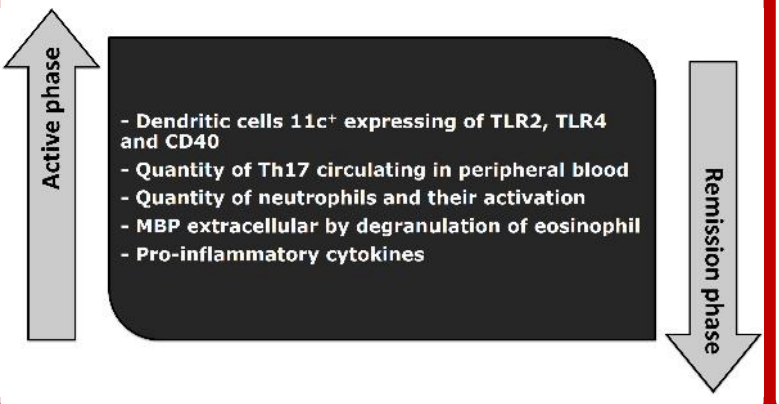
This review based on the revision of scientific literature consulting MEDLINE – Pubmed data base. The key words more used were: "ulcerative colitis", "cytokines and ulcerative colitis" and "X cell in ulcerative colitis" being X the interested cell. The searching was focused on the past 10 years.

Cellular characterisation and cytokines' pattern in mucosa

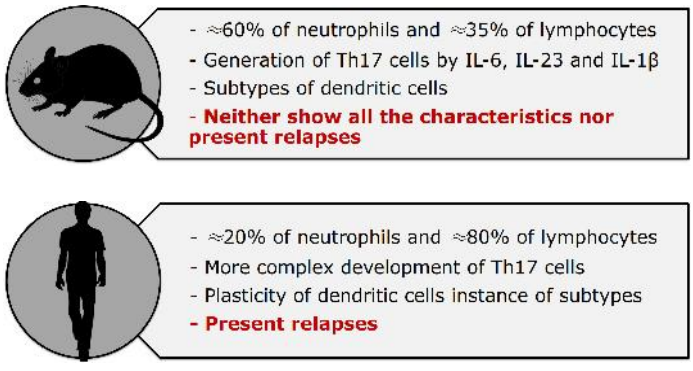


IEL (intraephitelial lymphocyte), ILC3 (innate lymphoid cell 3), Mϕ (macrophage)

Differences between active and remission phase



Animal model vs Human – Immunological aspects



Conclusion

1. Advances in research on the immune cells have revealed that innate lymphoid cells 3 and T-helper 17 cells seems to be important in the pathogenesis of ulcerative colitis.
2. Recent studies have shown that cytokines pathways and cellular interactions are much more complex than it was expected.
3. It is necessary more studies to found the ethology, preferentially in animal models that mimic better the disease.