Assessment of the early regenerative therapeutic response in graft versus host disease using high definition technology with virtual i-Scan chromoendoscopy

The gastrointestinal tract is the second most commonly involved organ system in graft versus host disease (GvHD) following allogeneic stem cell transplantation, and its involvement is associated with a worse prognosis [1, 2]. White light endoscopy findings are nonspecific and often unhelpful in the diagnosis of GvHD and evaluation of its response to therapy. Conventional histological examination of intestinal biopsy samples still represents the gold standard in GvHD diagnosis [3]. Moreover, after allogeneic stem cell transplantation, it could be potentially dangerous to carry out multiple biopsies and may require transfusion of erythrocytes, platelets, or coagulation factors. Here, we describe novel endoscopic findings associated with healing of the colonic mucosa in a patient with GvHD, obtained by high definition (HD+) technology with i-Scan virtual chromoendoscopy (Pentax Medical, Tokyo, Japan).

A 42-year-old man, who underwent allogeneic sibling stem cell transplantation for chronic lymphocytic leukemia, presented on day 79 with acute symptoms including vomiting, abdominal pain, and diarrhea. Colonoscopy showed multiple ulcers in the left side of the colon. Biopsy specimens were taken and pathological examination revealed colonic GvHD, grade 3/4. The patient was started on high-dose intravenous steroids, followed by antithymocyte globulin (ATG), and subsequently extracorporeal photopheresis. Flexible sigmoidoscopy with HD+ and i-Scan virtual chromoendoscopy was carried out to characterize the endoscopic findings of the response to therapy in...
GvHD. A novel endoscopic regenerative honeycomb mucosal healing pattern in GvHD (Fig. 1) was noted; the pattern characteristically consisted of an exuberant elongated, flowery appearance. The diagnosis was confirmed by histological examination, which demonstrated elongated regenerative crypts in the mucosa (Fig. 2).

HD+ with i-Scan endoscopy is an image-processing technology that analyzes the endoscopic mucosal and vascular pattern in real time [4]. It has shown promise in differentiating between colonic neoplastic and non-neoplastic lesions, in characterizing mucosal healing in inflammatory bowel disease, and for in vivo diagnosis of duodenal villous atrophy in celiac disease [5]. Here we have reported the novel finding of a honeycomb or flowerlike pattern in the regenerating mucosa using HD+ with i-Scan technology in the assessment of colonic mucosal outcome after therapy for GvHD.

Endoscopy_UCTN_Code_CCL_1AD_2AJ

Competing interests: None

Marietta Iacucci1, Andrew Daly2, Ahsan Chaudhry2, Peter Duggan2, Xianyong Gui3, Jonathan Love1, Subrata Ghosh1

1 Division of Gastroenterology and Hepatology, University of Calgary, Calgary AB, Canada
2 Department of Hematology, Bone Marrow Transplantation Group, Faculty of Medicine, University of Calgary, Calgary AB, Canada
3 Department of Pathology University of Calgary, Calgary AB, Canada

References

Bibliography
DOI http://dx.doi.org/10.1055/s-0033-1344823
Endoscopy 2013; 45: E389–E390
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

Corresponding author
Marietta Iacucci
Division of Gastroenterology
Department of Medicine
University of Calgary
Calgary AB
Canada
miacucci@ucalgary.ca

Iacucci Marietta et al. High-definition virtual i-can chromoendoscopy... Endoscopy 2013; 45: E389–E390