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Role of surveillance biopsy frequency post intestine transplant: A tertiary care experience

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Pre- and Peri-transplant Factors Impacting Frequency of Endoscopy after Intestinal TransplantationMoon J¹, Rahim R², Zhang H², Iyer K¹¹Mount Sinai Medical Center, ²City University of New York

Introduction: Our recent data revealed frequent routine surveillance endoscopy and biopsy (E&B) did not have clinical benefit after intestinal transplantation (ITX). After abandoning protocol E&B, average frequency of E&B during the first year was 2 times and ITX without stoma became a default practice at our center. Occasionally, however, there were patients who presented concerning symptoms repeatedly, requiring extraordinary numbers of E&B. Herein, we attempted to identify pre- and peri-transplant factors, which might impact on the frequency of E&B.

Methods: Study group included all forms of ITX from 2012 to 2019 performed at a single center. The primary end point was E&B frequency in one year. Univariate regression analysis was performed using negative binomial distribution to identify pre- and peri-transplant risk factors for E&B frequency. Wald test was used with $p < 0.2$.

Results: E&B was performed 0 to 13 times in 59 patients during the first year after ITX. Median number of E&B was 2. Low donor-recipient body weight ratio, high degree of anti-human leukocyte antigen mismatch, high calculated panel reactive antigen, more donor specific anti-human leukocyte antigen antibody (DSA), and positive physical cross match (XM) were related to more frequent E&B. Re-ITX, presence of DSA with high mean fluorescence intensity (>10000), positive virtual XM, long cold ischemia time, absence of the liver graft were not related to frequent E&B as well as mismatch between donor and recipient for cytomegalovirus, ABO blood group, and sex.

Conclusions: This result suggests immunologic incompatibility between donor and recipient impacts on the development of concerning symptoms to indicate E&B. Though all E&B in such cases did not reveal acute rejection. Positive physical XM could be considered as an indicator to create stoma to provide easy access for probable frequent E&B. Interestingly, factors considered as a high risk ITX such as positive virtual XM, isolated ITX without liver graft, re-ITX, and long cold ischemia time were not related to frequent E&B and therefore do not necessarily mandate to create the stoma.

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Role of Surveillance Biopsy Frequency Post Intestine Transplant: A Tertiary Care ExperienceIchkhanian Y¹, Ichkhanian Y², Beltran N³, Nagai S³, Jafri S⁴¹Wayne State University School of Medicine, ²Henry Ford Hospital - Department of Medicine, ³Henry Ford Hospital - Department of Transplant Surgery, ⁴Henry Ford Hospital - Division of Gastroenterology and Hepatology

Background: With only 81 intestine transplant (IT) in the U.S. in 2019, the literature on this type of solid organ transplant remains scarce. Frequent surveillance biopsy is required on the first month post IT due to high-risk of acute rejection, however, the frequency of surveillance biopsy 1-month post IT is often determined by the physician and the institutions' preference.

Aims: Report IT outcomes and clinical impact of surveillance biopsy at a single tertiary care center.

Methods: This is a retrospective review of patients that underwent IT during the time-period between 08/2010 and 03/2020. Primary outcome was the correlation between increased protocol biopsies and mortality. Secondary outcomes included correlation between increased protocol biopsies and hospital re-admissions, length of hospital stay, and rate of biopsy proven rejection detection. Kaplan-Meier curves was used to perform the survival analysis at 6-month, 1-year, and 2-years post-transplant.

Results: A total of 35 patients (mean age 47.6 ± 12.9 years, F 22 (63%) underwent IT for: ischemic bowel 11 (31%), Chron's disease 9 (25%), neuroendocrine tumor 6 (17%), trauma 3 (9%) and "others" 6 (17%), of which 14 (40%) were part of multivisceral organ transplant. During the first-year post-transplant, the median number of biopsies was 12 (IQR 6-30), with evidence of definite acute graft rejection in 40%, 27%, and 41% at the 1-3, 3-6, and 6-12 post IT time intervals, respectively. During the duration of the study, the mortality rate was 18/35 (51%) at a median time of 37 (12-60) months post IT, and a total of 8/35 (23%) patients underwent enterectomy at a median time of 12 (8-36) months post IT (Table 1). In general, there was survival benefit for patients who had a total number of biopsies of ≥ 10 as compared to < 10 biopsies at the time interval of 6-months post IT, ($p=0.008$) (Table 2). There was a non-significant trend with longer median length of hospital stay in patients with greater number of biopsies.

Conclusion: Our results indicate evidence of survival benefit of increased protocol biopsies. Studies with larger sample sizes are required to validate our results.