

Laparoscopic restorative proctocolectomy with ileal pouch-anal anastomosis for ulcerative colitis and impact of anti-tumor necrosis factor on postoperative outcomes

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The anti-tumor necrosis factor alpha (infliximab) has become an effective drug in the medical treatment of moderate or severe ulcerative colitis [1]. Infliximab can delay the incidence of complications and disease progression. However, the definitive treatment of ulcerative colitis is a surgical approach. Restorative proctocolectomy (RPC) with ileal pouch-anal anastomosis (IPAA) remains the standard of care for most patients with ulcerative colitis [2]. The short-term postoperative outcomes can substantially be improved by laparoscopic surgery for gastrointestinal diseases, including colorectal cancer and gastric cancer [3–9]. This advance in laparoscopic surgery has been translated into laparoscopic restorative proctocolectomy (LRPC) with IPAA for the treatment of ulcerative colitis [10]. However, the impact of medical treatment with infliximab on a subsequent surgical treatment is unclear and because the data are still scarce, there is debate whether infliximab increases postoperative complications.

Given this uncertainty, Coquet-Reinier and colleagues [11] evaluated the effect of infliximab on postoperative morbidity after LRPC with IPAA in patients who were previously treated with this anti-tumor necrosis factor. In this report published in the August issue of *Surgical Endoscopy*, the authors compared the results regarding operating time, complications, and hospital stay between

patients with LRPC and IPAA with or without preoperative treatment with infliximab. There was no significant difference between patients treated with and those treated without infliximab regarding mean operative time (353 vs. 355 min), complication rate (23 vs. 38%), and mean hospital stay (22 vs. 25 days). Coquet-Reinier and colleagues concluded that there was no adverse impact of infliximab previous therapy on postoperative morbidity of patients with ulcerative colitis treated with laparoscopic restorative proctocolectomy with IPAA.

Laparoscopic restorative proctocolectomy with IPAA is a highly demanding procedure. It can be safe and effective only when it is performed in specialized institution by high-volume surgeons. The difficulties in both disease management and laparoscopic surgery are reflected by the long hospital stay, more than 3 weeks, and a mean operating time of approximately 6 hours in this study. Although it is hard to draw conclusions from a small retrospective analysis, this study provides useful information that infliximab does not likely increase postoperative complications after laparoscopic RPC and IPAA. Certainly further evaluation is needed.

Given the aggressiveness of surgery with adverse effects in quality of life, current research is focused on how to design and develop novel biologic agents that would be effective in reversing the progression of disease or even associated with cure-sparing large surgical procedures and adverse effects. However, ulcerative colitis and morbus Crohn are complex multifactorial disorders, such as cancer, and there are still major challenges for the development of novel biomarkers and biologic drugs that may successfully treat complicated disorders. The advent of next-generation sequencing technology for partial or complete sequencing of human genomes advances in genome-wide association studies, genetics, and personal genomics along with

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progress in computational biology promise improved understanding of complex disorders that is essential for developing effective drugs and robust biomarkers [12–32].

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References

- Su C, Salzberg BA, Lewis JD, Deren JJ, Kornbluth A, Katzka DA, Stein RB, Adler DR, Lichtenstein GR (2002) Efficacy of anti-tumor necrosis factor therapy in patients with ulcerative colitis. *Am J Gastroenterol* 97:2577–2584
- Fazio VW, Ziv Y, Church JM (1995) Ileal pouch-anal anastomosis complications and function in 1005 patients. *Ann Surg* 222:120–127
- Ziogas D, Polychronidis A, Kanellos I, Roukos D (2009) Laparoscopic colectomy survival benefit for colon cancer: is evidence from a randomized trial true? *Ann Surg* 249(4):695–696
- Ziogas D, Roukos D (2009) Robotic surgery for rectal cancer: may it improve also survival? *Surg Endosc* 22(5):1405–1406
- Katsios GC, Baltogiannis G, Roukos DH (2010) Laparoscopic surgery for gastric cancer: comparative-effectiveness research and future trends. *Expert Rev Anticancer Ther* 10(4):473–476
- Liakakos T, Roukos DH (2009) Randomized evidence for laparoscopic gastrectomy short-term quality of life improvement and challenges for improving long-term outcomes. *Ann Surg* 250(2):349–350
- Roukos DH (2009) Laparoscopic gastrectomy and personal genomics: high-volume surgeons and predictive biomedicine may govern the future for resectable gastric cancer. *Ann Surg* 250:650–651
- Liakakos T, Roukos D (2008) Laparoscopic gastrectomy: advances enable wide clinical application. *Surg Endosc* 22(6):1553–1555
- Liakakos T, Roukos DH (2008) Is there any long-term benefit in quality of life after laparoscopy-assisted distal gastrectomy for gastric cancer? *Surg Endosc* 22(5):1402–1404
- Ahmed Ali U, Keus F, Heikens JT, Bemelman WA, Berdah SV, Gooszen HG, van Laarhoven CJ (2009) Open versus laparoscopic (assisted) ileo pouch anal anastomosis for ulcerative colitis and familial adenomatous polyposis. *Cochrane Database Syst Rev* doi:10.1002/14651858
- Coquet-Reinier B, Berdah SV, Grimaud JC, Birnbaum D, Cougard PA, Barthet M, Desjeux A, Moutardier V, Brunet C (2010) Preoperative infliximab treatment and postoperative complications after laparoscopic restorative proctocolectomy with ileal pouch-anal anastomosis: a case-matched study. *Surg Endosc* 24(8):1866–1871
- Roukos DH, Katsios C, Liakakos T (2010) Genotype-phenotype map and molecular networks: a promising solution in overcoming colorectal cancer resistance to targeted treatment. *Expert Rev Mol Diagn* 10(5):541–545
- Roukos DH (2010) Systems medicine: a real approach for future personalized oncology? *Pharmacogenomics* 11(3):283–287
- Roukos DH (2010) Novel clinico-genome network modeling for revolutionizing genotype-phenotype-based personalized cancer care. *Expert Rev Mol Diagn* 10(1):33–48
- Roukos DH (2009) Breast cancer outcomes: the crucial role of the breast surgeon in the era of personal genetics and systems biology. *Ann Surg* 249(6):1067–1068
- Ziogas D, Roukos DH (2009) Genetics and personal genomics for personalized breast cancer surgery: progress and challenges in research and clinical practice. *Ann Surg Oncol* 16(7):1771–1782
- Roukos DH (2010) Targeting gastric cancer with trastuzumab: new clinical practice and innovative developments to overcome resistance. *Ann Surg Oncol* 17:14–17
- Roukos DH (2009) Genome-wide association studies and aggressive surgery toward individualized prevention, and improved local control and overall survival for gastric cancer. *Ann Surg Oncol* 16(4):795–798
- Ziogas D, Roukos DH (2009) CDH1 testing: can it predict the prophylactic or therapeutic nature of total gastrectomy in hereditary diffuse gastric cancer? *Ann Surg Oncol* 16(10):2678–2681
- Roukos DH, Ziogas DE, Katsios C (2010) Multigene assays and isolated tumor cells for early breast cancer treatment: time for bionetworks. *Expert Rev Anticancer Ther* 10(8):1187–1195
- Roukos DH (2010) Complete genome sequencing and network modeling to overcome trastuzumab resistance. *Pharmacogenomics* 11(8):1039–1043
- Roukos DH (2010) Next-generation, genome sequencing-based biomarkers: concerns and challenges for medical practice. *Biomark Med* 4(4):583–586
- Roukos DH, Tzakos A, Zografos G (2009) Current concerns and challenges towards tailored anti-angiogenic therapy in cancer. *Expert Rev Anticancer Ther* 9(10):1413–1416
- Roukos DH (2009) Radiation therapy for breast cancer. *N Engl J Med* 360(13):1362; author reply 1363
- Roukos DH, Kappas AM, Tsianos E (2002) Role of surgery in the prophylaxis of hereditary cancer syndromes. *Ann Surg Oncol* 9(7):607–609
- Roukos DH (2009) Assessing both genetic variation (SNPs/CNVs) and gene-environment interactions may lead to personalized gastric cancer prevention. *Expert Rev Mol Diagn* 9(1):1–6
- Roukos DH, Paraschou P, Lorenz M (2000) Distal gastric cancer and extensive surgery: a new evaluation method based on the study of the status of residual lymph nodes after limited surgery. *Ann Surg Oncol* 7(10):719–726
- Roukos DH, Lykoudis E, Liakakos T (2008) Genomics and challenges toward personalized breast cancer local control. *J Clin Oncol* 26(26):4360–4361
- Roukos DH, Ziogas D (2009) Human genetic and structural genomic variation: would genome-wide association studies be the solution for cancer complexity like Alexander the Great for the “Gordian Knot”? *Ann Surg Oncol* 16(3):774–775
- Roukos DH, Kappas AM, Agnantis NJ (2003) Perspectives and risks of breast-conservation therapy for breast cancer. *Ann Surg Oncol* 10:718–721
- Katsios C, Ziogas DE, Roukos DH (2010) Colorectal cancer: cetuximab, KRAS, BRAF, PIK3CA mutations and beyond. *Expert Rev Gastroenterol Hepatol* 4(5):525–529
- Katsios C, Roukos DH (2010) Individual genomes and personalized medicine: life diversity and complexity. *Per Med* 7(4):347–350