

## Effects of Immunonutrition for Cystectomy on Immune Response and Infection Rates: A Pilot Randomized Controlled Clinical Trial

Hamilton-Reeves JM, Bechtel MD, Hand LK, Schleper A, Yankee TM, Chalise P, Lee EK, Mirza M, Wyre H, Griffin J, Holzbeierlein JM. Euro Urol 2016; 69(3):389-392.

### Objectives

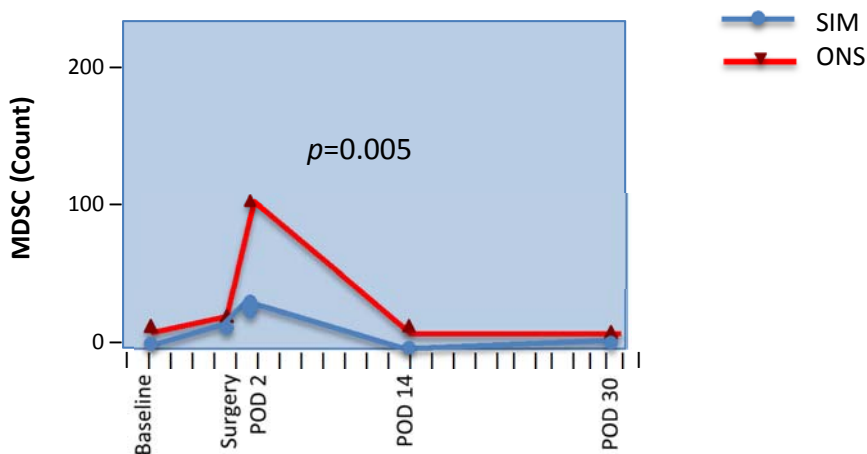
Investigate if perioperative use of arginine-enriched specialized immunonutrition (SIM) vs. standard oral nutritional supplements (ONS) will modulate the immune response in bladder cancer patients having radical cystectomy (RC).

### Methods

Men scheduled for RC (n=29) were randomized to either a study group that received a 5-day pre- and post-operative course of SIM (IMPACT Advanced Recovery® Drink), or a control group that received standard ONS (BOOST PLUS® Drink) in the same perioperative fashion. Anesthetic, surgical and postoperative care were provided according to Enhanced Recovery After Surgery (ERAS) pathways adopted by the institution, and did not include preoperative carbohydrate loading. Subjects were relatively well-nourished in that none had a body mass index <18.5, nor ≥10% weight loss in the past 6 months. Myeloid-derived suppressor cell (MDSC) counts were followed, as well as early and late postoperative complications including infections.

### Results

#### Total Myeloid-Derived Suppressor Cells (adapted from Fig. 1A)



- **MDSC counts in the SIM vs ONS groups were significantly lower:**
  - Over time (p=0.005)
  - On Postoperative Day (POD) 2 (p<0.001)
  - Between baseline and POD 2 (p=0.02)
- **Neutrophil: Lymphocyte (NLR) was lower in the SIM vs. ONS group 3 hours after incision (p=0.039)**
- **Although not powered to detect outcome differences, SIM vs ONS at 90 days showed:**
  - Trend towards fewer postop complications (33% less;p=0.06)
  - 39% reduction in infection (p=0.027)

### Conclusions

Results demonstrate that radical cystectomy patients receiving perioperative IMPACT Advanced Recovery® vs. ONS as part of an ERAS bundle have a modulated immune response to surgery. The sample size limits conclusions on clinical outcomes, but results suggest that immune response in the short-term may alter resistance to infection as time passes.

Summary prepared by Nestlé HealthCare Nutrition. The complete study can be accessed on line at:

<http://www.ncbi.nlm.nih.gov/pubmed/26654125>