

Key Takeaways

Columbia HICCC Cancer Series: Advances in Colorectal Cancer -- Precision Treatment and Surgical Innovations

Speakers:

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1. Colorectal cancer care is rapidly shifting toward precision-guided, multidisciplinary decision-making

Across surgery, radiation, and medical oncology, speakers emphasized that treatment decisions are no longer driven by stage alone. Molecular markers, imaging, patient fitness, and disease biology increasingly guide *when*, *how*, and *how much* treatment is delivered

2. ctDNA is emerging as one of the most powerful prognostic tools in colorectal cancer

- Post-surgical ctDNA positivity is strongly associated with a higher risk of recurrence across stages
- ctDNA outperforms traditional high-risk features (e.g., nodal status, T stage) in predicting outcomes
- Persistent ctDNA positivity after adjuvant therapy signals poor prognosis and may warrant treatment intensification

3. ctDNA-guided therapy can help avoid overtreatment—but is not yet standard of care

- In **stage II disease**, ctDNA negativity may support safe surveillance and help spare patients' unnecessary chemotherapy
- In **ctDNA-positive patients**, evidence increasingly supports offering adjuvant chemotherapy regardless of traditional risk factors
- For **stage III disease**, ctDNA-guided escalation or de-escalation remains investigational, with ongoing trials needed before routine adoption
- Current NCCN guidelines do *not yet* recommend starting treatment based solely on ctDNA results

4. Short-course radiotherapy (SCRT) remains a valid and practical option in the TNT era

- SCRT followed by delayed surgery achieves outcomes comparable to long-course chemoradiation in selected patients
- Advantages include shorter treatment duration, improved logistics, and feasibility in resource-constrained settings
- However, recent data suggest **long-course radiotherapy may offer better local control** in bulky, T4, or high-risk tumors
- Treatment choice should be individualized based on tumor biology, MRI findings, patient fitness, and institutional expertise

5. High-quality surgery—especially Total Mesorectal Excision (TME)—remains central to cure

- Meticulous TME technique significantly reduces local recurrence and improves survival
- Surgical quality can rival or exceed the impact of radiation in reducing local failure
- MRI-guided planning and multidisciplinary coordination are critical to optimizing outcomes

6. Minimally invasive and robotic surgery offer comparable oncologic outcomes with functional benefits

- Laparoscopic and robotic approaches show similar survival and recurrence outcomes compared to open surgery
- Robotic surgery may offer advantages in pelvic visualization and postoperative urinary and sexual function
- Conversion rates and surgeon experience remain key determinants of success

7. Organ preservation and quality of life are increasingly important goals

- Higher pathological complete response rates with TNT open doors to *watch-and-wait* strategies in select patients
- Advanced reconstructive techniques and continent diversion options can help avoid permanent stomas in ultra-low rectal cancers
- Treatment success is now measured not only by survival, but also by long-term function and quality of life

8. The future of colorectal cancer care lies in integration, not isolation

The strongest message across sessions was the need for **tight integration between surgery, radiation, medical oncology, imaging, and molecular diagnostics**—with treatment plans evolving dynamically as new data (like ctDNA trends) emerge