

Performance Rate Improvement for 12RLN 2004-2008

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INTRODUCTION

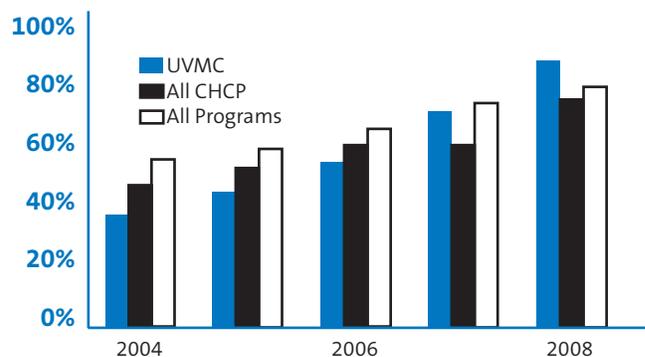
12RLN is a quality initiative of the Commission on Cancer. It is one of six initiatives under the Cancer Program Practice Profile Reports (CP3R). It stands for “At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer.”

This initiative was started because the survival of colon cancer patients decreases as the absolute number of positive lymph nodes increases.¹ Identifying all positive nodes is essential to accurate staging and planning of adjuvant chemotherapy. It has been presumed that harvesting 12 or more regional lymph nodes is a surrogate marker for more accurate staging. This is an area of controversy.

The aim of this study is simply to review the performance rate of this initiative at our institution and how it has changed over time and to compare our performance to available groups within the CP3R database. This information will be shared with the Cancer Committee at UVMC and included in the annual report for dissemination to the medical staff and other interested parties.

METHODS

A query of CP3R database compiled within parameters of like entities.



RESULTS

The overall performance rates are depicted in the above Figure by year.

DISCUSSION

The 12RLN data is now an established quality initiative. Whether it truly is a surrogate marker for more accurate staging is controversial. The performance rates of UVMC and all programs have improved in the study interval. In 2008, UVMC had 90.0% of eligible patients with 12 or more lymph nodes in their resected specimen. This is a marked improvement compared to just four years prior. Some of the initiatives started by our program included increasing awareness of the 12RLN initiative both among the surgeons and the pathologists. Our pathologists will now search twice and use fat reducing technique to comply with the initiative. Our performance now exceeds that of all community hospital cancer programs (CHCP) and even the overall performance of all programs including tertiary referral centers.

ⁱ Chang GJ, Rodrigas-Bigas MA, Skibber JM, Moyer VA. Lymph node evaluation and survival after curative resection of colon cancer: systematic review. *J Natl Cancer Inst* 2007;99:433-441.

Lynch Syndrome (HNPCC Hereditary Nonpolyposis Colorectal Cancer)

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Lynch syndrome, also known as Hereditary Nonpolyposis Colon Cancer (HNPCC), is the most common of the hereditary colon cancer syndromes and is believed to account for 3% to 5% of all colorectal cancers. It is now

known that Lynch syndrome results from an inherited mutation in one of the mismatch repair (MMR) genes. Normally, MMR genes produce proteins that identify and correct base-pairing mismatches that can occur during DNA replication. Consequently, a mutation that inactivates an MMR gene leads to accumulation of other mutations which significantly increases the likelihood of developing cancer. Four MMR genes (MLH1, MSH2, MSH6 and PMS2) have been linked to Lynch syndrome. Germline mutations in MLH1 and MSH2 account for the vast majority of detected mutations in families with Lynch syndrome.<http://www.myriadpro.com/references>

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Lynch Syndrome Cancer Risks

Individuals with Lynch syndrome have a 25% increased risk of colorectal cancer by the age of 50, and up to 82% by age 70. The risk for certain other cancers, primarily endometrial (up to 71%), ovarian (up to 12%) and gastric (up to 13%) is also increased in Lynch syndrome. Mutation carriers previously diagnosed with cancer also have a significantly increased risk of developing a second primary cancer of up to 50% within 15 years of the first diagnosis.

Identifying Patients at Risk for Lynch Syndrome

Finding patients at risk for Lynch syndrome and following up with them is perhaps the most critical step in potentially changing hereditary cancer outcomes.

The following “red flags” in a patient’s personal or family history may indicate an increased risk for Lynch syndrome and help identify candidates for testing.

- Colon cancer before age 50
- Endometrial cancer before age 50
- 2 or more Lynch-associated cancers**
- A previously identified Lynch syndrome mutation in the family

**Lynch-associated cancers include colon, endometrial, gastric, ovarian, ureter/renal pelvis, biliary tract, small bowel, pancreas, brain and sebaceous adenomas.

Medical Management Strategies That May Reduce the Risk of Cancer

Colon Cancer

Increased Surveillance for Colorectal Cancer

- Colonoscopy every 1-2 years beginning between age 20 and 25, OR 10 years before the earliest age of a patient’s family member diagnosed with colorectal cancer - whichever comes first
- Consider annual colonoscopy after age 40
- For MSH6 mutation carriers consider initiating colonoscopy screening at age 30-35 or 10 years before the earliest age of a patient’s family member diagnosed with colorectal cancer. This is due to the later average age of onset in MSH6 mutation carriers

Surgical Management of Colorectal Cancer

- If colon cancer is diagnosed (or more than one advanced adenoma is found) in a patient with Lynch syndrome, total colectomy with ileo-rectal anastomosis OR hemicolectomy is an option

- In patients unwilling or unable to undergo periodic colonoscopy screening, prophylactic total colectomy with ileorectal anastomosis may be an option based on carrier status alone

Endometrial and Ovarian Cancer

Surveillance for Endometrial and Ovarian Cancer

- Consideration of referral to a gynecologic oncologist to discuss screening options that can include gynecologic exam, transvaginal ultrasound, endometrial aspiration and CA-125 every year, beginning between age 25 and 35

Surgical Management of Endometrial and Ovarian Cancer

- Prophylactic total abdominal hysterectomy and bilateral salpingo-oophorectomy is a risk reducing option for women who have completed childbearing
- May also be considered at time of colon surgery if postmenopausal or childbearing is complete

Surveillance for Other Lynch Syndrome-Related Cancers

- For gastric and duodenal cancer: Consider upper GI endoscopy (wide side viewing scope) at age 25-30 years and repeat every 1 to 3 years depending on findings
- For urothelial cancer: Consider urinalysis on an annual basis
- For CNS cancer: Physical examination on an annual basis

References

- Aarnio M, Sankila R, Pukkala E, et al. (1999). Cancer risk in mutation carriers of DNA-mismatch-repair genes. *International Journal of Cancer*. 81, pp. 214-218.
- Burke W, Petersen G, Lynch P, et al. (1997) Recommendations for follow-up care of individuals with an inherited predisposition to cancer. Hereditary nonpolyposis colon cancer. Cancer Genetics Studies Consortium. *JAMA*. :277, pp. 915-919.
- Giardiello FM, Brensinger JD, Petersen GM. (2001) AGA technical review on hereditary colorectal cancer and genetic testing. *Gastroenterology*, 121, pp. 198-213.