Prevalence of Local Recurrence of Colorectal Cancer at the Iranian Cancer Institute

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Abstract

Background: Although a great deal of progress has been made in the management of colorectal cancer in terms of neoadjuvant modalities, surgical techniques and adjuvant therapies, the recurrence of tumors remains an enigmatic complication in patients. A better understanding of colorectal cancer and of factors that lead to recurrence of disease can provide helpful information for designing more effective screening and surveillance methods. Aim: To investigate the factors that may lead to local recurrence of colorectal cancers. Materials and Methods: The current retrospective case study evaluated 617 patients admitted to the Iranian Cancer Institute (the largest referral cancer center in the country) from 1995 to 2009 with confirmed colorectal cancer. Patients with distant metastasis, or with pathology other than adenocarcinoma and no follow-up, were excluded (175 patients). The remainder (442) included 294 (66.5%) with rectal cancer and 148 (33.5%) with colon cancer. The median duration of follow-up was 26 months. Results: The total rate of recurrence was 17.4%, comprising 19.6% and 16.3% recurrence rates in colon and rectal cancer, respectively. Conclusions: Recurrence of colorectal cancer was significantly correlated to tumor grade (p<0.008).

Keywords: Colorectal cancer - recurrence - grade - stage - prevalence - Iran

Introduction

Colorectal cancer remains an enormous financial burden on the health care system. Although many new and advanced techniques have been introduced for the management and surveillance of this disease, local recurrence and distant metastasis are still considered major complications. In Iran during the past few decades, there has been both an increase in the prevalence of colorectal cancer and a decrease in the age of onset (Vakili et al., 1976; Fazeli et al., 2007).

It has been shown that the prognosis and survival rate of colon cancer are different from rectal cancer (Wiig et al., 2007; Center et al., 2009; Wang et al., 2010). A thorough knowledge of colorectal cancer would be helpful in establishing better screening and management programs that would improve the quality of life of patients.

Here, the rate of recurrence in patients with confirmed colon cancer is compared with that of patients suffering from rectal cancer who were referred to the Cancer Institute during a 15-year period. Demographic characteristics are also evaluated in order to identify factors that may be involved in recurrence susceptibility.

Materials and Methods

The medical files of 617 patients treated for colorectal cancer at the Cancer Institute from March 1995 to March 2009 were evaluated. Ninety-seven patients (15.7%) were excluded from the study as follows: patients with distant metastasis (confirmed with preoperative CT scan and sonography or by intraoperative finding). In addition, 12 (1.9%) patients whose pathology study showed positive margin from the first surgery, patients with tumors other than adenocarcinoma, 10 (1.6%) (Carcinoid, neuroendocrine and gastrointestinal stromal tumors) and patients with lack of follow up, 56 (9.1%) were also excluded from the study.

A total number of 442 patients were chosen for the study, including 294 (66.5%) with rectal cancer and 148 (33.5%) with colon cancer. Demographic characteristics, tumor location based on endoscopic report, pathology, disease stage and modality of treatment were collected from the files. All patients were operated on by the expert attending. Patients with T3-4 or positive node in pathology reports were treated with 5-fluorouracil based chemotherapy and for rectal cancer, with the same stage, radiotherapy concurrently added to the mentioned regimen (total doses of 45-50 gray in 25-28 divided fractions was used, concurrently with 5FU as a radiosensitizer). Since 2005 according to institute protocol, all rectal cancers with T3-4 or positive node in pre-operation staging workup (detected by CT scan and endosonography) have been treated with neoadjuvant chemoradiation followed by
of tumor was significantly correlated with recurrence in colon and rectal cancer (p<0.008).

**Discussion**

Recurrence of cancer is tragic for both patients and the medical team. Recurrence in rectal carcinoma is scarcely tolerable for patients because there is a higher risk of permanent stoma that may lead to pelvic exenteration and increased morbidity in patients because of deep pelvic abscess, delay in perineum healing and leakage (Wiig et al., 2007; Ferenschild et al., 2009).

Andreoni et al (2007) showed that recurrence in rectal cancer is significantly higher than with colon cancer (14% versus 6.1%; p<0.001). In addition, a study by Li M et al (2008) demonstrated that the recurrence of rectal cancer is 1.5 times higher than colon cancer.

In the current study we did not find any significant difference in rate of recurrence between rectal and colon cancer patients. Our findings are compatible with another study by Kreamer et al (2001) which showed that the site of the original tumor does not affect recurrence rate of colorectal cancers.

Beside, similar to Nadoshan et al (2013) study, sex had no effect on recurrence.

Inconsistent findings regarding the rate of recurrence in colorectal carcinoma might be explained by different preoperative staging, and by variations in neoadjuvant regimens plus inconsistent treatment modalities throughout the world, as discussed in Knut et al (2010).

We did not find any correlation between recurrence and disease stage. This may be related to incomplete surgical staging (inadequate harvested lymph nodes), incorrect assessment of lymph nodes and different staging systems being used during the study period (1995-2009). It should be mentioned that proper radical surgical resection (total mesorectal excision) and neoadjuvant therapies in recent years mainly influence the staging of colorectal cancer (Staib et al., 2002).

Neoadjuvant therapy plays an important role in reduction of local recurrence of rectal cancer (Doll et al., 2009; Hansen et al., 2009). However, in the Iranian population colorectal cancers have shown a shift to the left side of the colon (Omranipour et al., 2012) and we also reported higher number of rectal cancers in the current study. There has been no significant increase in colon cancer recurrence compared to rectal cancer.

Although histological grading plays a significant role in disease prognosis (Greene et al., 2002), it is not part of the TNM classification (Compton et al., 2002). Our study also demonstrates a high correlation between tumor grading and recurrence (p<0.008).

We did not find any effect on tumor musin production and recurrence that is similar to findings in studies performed by other groups (Enriquez et al., 1998; Farhat et al., 2008). Beside Farhat et al (2008) showed that colorectal mucinous adenocarcinoma is present with high grade tumors compared to non-mucinous ones. Moreover, studies on the prognosis of mucinous tumors showed no effect of age, tumor staging or grading on the prognosis. In contrast to the aforementioned study, Messerini et al...
(1995); Cusack et al (1996) demonstrated that mucinous carcinoma has a poorer prognosis, higher recurrence and shorter survival time. Finally, another study by Adsay et al (2005) showed that various types of mucinous carcinoma affect disease prognosis differently.

In previous studies, no association was made between blood group and the risk of colorectal cancer Khalili et al (2011). A study by Halvorsen (1986) also supports this finding although it demonstrates that patients with positive rhesus types had more metastasis to lymph nodes. Our study did not find any association between blood group or rhesus types with recurrence of colorectal cancer.

Acknowledgements

This work was supported by a research grant from the Tehran University of Medical Science. The authors declare no conflict of interest. We would like to thank Katherine Regan for editorial assistance.

References


DOI:http://dx.doi.org/10.7314/APJCP.2014.15.20.8587