

Colon Cancer:

The Changing Face of an Old Disease Entity.



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Colon is among the most frequent sites to be affected by cancer in human body and is considered as the commonest anatomic location to be affected by malignant diseases along the entire gastro-intestinal tract. Over decades, colon cancer was considered as a disease of the elderly; however, an age-incidence shift to younger age groups has been reported over the past 2 decades. Better understanding of molecular and genetic factors playing in the back-stage of disease allowed health care professionals to stratify patients into different risk groups and hence the ability to tailor the strategy of therapeutic approach. Moreover, the advances in the science of molecular biology enabled researchers to develop drugs targeting specific points in the malignant cell cycle leading to a breakthrough especially in advanced disease sitting; as those with colon cancer spreading to liver, where nowadays we can talk about cure.

Who is at Increased Risk of Developing Colon Cancer?

Colon cancer can occur in two forms; the sporadic form which may affect anyone without family history or apparent cause, and this may be linked to exposure to certain dietary factors, elements or carcinogens for a long time as some forms of pesticides or hydrocarbons implicated in manufacture of some supplementary food items. The second form is related to inherited genetic predisposition due to certain familial diseases with a colonic projections originated from its wall known as polyps; some of which have the ability to turn malignant.

When to Suspect You Have Colon Cancer?

Manifestations of colon cancer are related to the shape of the portion affected of the colon. Normally, the colon is formed of 4 parts; ascending, transverse, descending and sigmoid part. The first 2 parts are rather capacious and wide and hence when they have cancer, a very long time should pass before causing any warning complaints or signs. During the pre-diagnostic period, the manifestations are usually vague in the form of; discomfort, flatulence, alternating attacks of changing bowel habits as constipation and diarrhoea and may be bleeding but less likely to lead to obstruction unless too advanced to result in complete occlusion of colonic lumen. In contrast to the right colon, the left colon (descending and sigmoid colon) is rather a narrow tube, thus manifestations may occur earlier and will be mostly in the form of; progressive constipation not responding to conventional medicines, frequent and even persistent colicky abdominal pain and sometimes frequent passage of fresh blood with stools in the absence of piles or other more common rectal problems. The condition mostly ended by accidental diagnosis upon presentation with acute intestinal obstruction (Neither passage of stools nor flatus for more than 24-48 hours) with repeated vomiting.

Mandatory diagnostic procedures include conventional X-Ray image while in standing position where multiple fluid levels will be found due to obstruction, lower gastrointestinal endoscopy to assess for the presence of tumor mass within the colon and to have a tissue sample for analysis and identification of specific tumor data. Colonoscopy may be avoided if the facility of recently introduced magnetic resonant virtual colonoscopy is available although tissue sample cannot be obtained in this instance. Other diagnostic utilities include CT-Scan with administration of certain contrasts and dyes. A specific test to detect occult (not apparent) blood in stools is beneficial in selecting patients with long standing colonic manifestations not reaching obstruction to go for diagnostic or screening colonoscopy.

Treatment of Colon Cancer:

Surgical removal of the colon segment containing the tumor and then restoration of the colonic continuity in most of cases is the basic and curative treatment. Adequate removal of lymph nodes in the region of the tumor is mandatory (Not less than 12 nodes should be removed to be considered a satisfactory surgery). In some instances, diversion of the passage of stools to another artificial opening placed on the abdominal wall may be required for sometime, then to be corrected after completing treatment of the tumor. Permanent diversion is a less common practice unless medically warranted. Complete successful surgery will provide the following crucial informations:

1. Pathological grade and patterns of tumor growth indicating its behaviour.
2. Number of lymph nodes involvement reflecting disease aggressiveness.
3. Identification of genetic abnormalities predicting the possibility of tumor recurrence and resistance to treatment (onco-Dx) which is available and under intense evaluation in many centres worldwide.

Classically complementary (adjuvant) drug therapy is mandatory to achieve cure and improve survival in patients with stage III disease (tumor in the

colon spreading to lymph nodes) and in some patients with stage II (no lymph node involvement) but with high risk of recurrence. It goes without saying that patients with stage IV disease are definitely indicated for drug therapy to improve their stay without disease recurrence or progression. Cure can be achieved in selected patients with advanced disease and isolated liver involvement through incorporation of targeted therapies to conventional chemotherapy in addition to surgery and/or other ablative procedures as radiofrequency to liver tumors with marvellous cure rates.

The Face of Disease is Changed:

The identification of certain molecular events encountered in disease natural history and their recognition of its amplification as a major switch point in aggressiveness and resistance to conventional treatment with the ultimate development of specific agents to block these events and hence maximizing benefits of therapy. Among these events are certain receptors known as (**Epidermal Growth Factor Receptor**), where their activation will promote cell division, spread and aggressiveness. Also other biological alteration lead to formation to abnormal blood vessels around the tumor (**Angiogenesis**), which will contribute to disease upstage as well as spread to other distant organs.

Final Take Home Message:

Although the problem with colon cancer is the diagnosis while in advanced state due to vague manifestations mistakes with other benign disorders, care must be taken too seriously to investigate patients with continuous abdominal complaints inspite of simple and specific medications. Cure is the ultimate result awaited in most of patients even with localized disease and increasing proportion of patients with advanced disease through adoption of novel therapeutics based on attacking specific biological abnormalities (Targeted Therapies).