Introduction
Colorectal carcinoma is the second commonest cancer in Hong Kong in 1999 with over 3,000 new cases. Most of the cancers developed over time from benign colonic polyps. The interval between the development of adenomatous polyps and their progression to cancer occurs over a 5- to 15-year period. Identification and removal of adenomatous polyps during this period can reduce the incidence of cancer. In addition, cancers diagnosed at an earlier stage are associated with a better prognosis than those diagnosed at a more advanced stage. Hence screening for colorectal cancer is an important public health issue.

Screening of colorectal cancer is cost effective (<$30,000 per additional year of life gained) regardless of the method chosen. At present two modes of screening exist, being opportunistic screening and organized screening program. Opportunistic screening is performed by family physicians on an individual basis, or ad hoc screening organized by voluntary agencies on a limited scale. Organized screening program is performed on a national/provincial scale, within a framework of a comprehensive cancer control program. Despite efforts over the past few decades, global awareness in colorectal cancer screening remains poor. This article will discuss the different screening methods, the population that should be targeted, and the current status of screening.

The Targeted Population
Every individual should have risk stratification for colorectal cancer. Age is most fundamental for determining risk. Almost three quarters of colorectal cancer are diagnosed in those age 65 years or older. Therefore to screen subjects for advanced adenomas or early cancer, asymptomatic individuals older than 50 years without other risk factors should be considered. High risk individuals include those with personal history of adenomatous polyps and/or colorectal cancer, familial adenomatous polyposis (FAP), hereditary non-polyposis colorectal cancer (HNPCC), inflammatory bowel disease and family history of colorectal cancer. Screening methods and screening intervals should be individually tailored. Currently, the American Cancer Society recommends the following colorectal cancer screening strategies for men and women at average risk of developing colorectal cancer, beginning at age 50: a yearly faecal occult blood test, plus flexible sigmoidoscopy every 5 years; or colonoscopy every 10 years; or double contrast barium enema every 5 to 10 years.

Individuals with personal history of adenomatous polyps and/or colorectal cancer, and those with inflammatory bowel diseases will be under surveillance program with their physicians and will not be discussed in this article.

Individuals with a family history of colorectal cancer are at increased risk for colorectal cancer. The higher risk is seen in those who have two or more first-degree relatives with colorectal cancer, and those whose relative was less than 50 years of age when cancer was diagnosed. For persons who have a first-degree relative with colorectal cancer but no obvious inherited syndrome, the recommendation is to begin screening at age 40 with fecal occult blood testing and flexible sigmoidoscopy. The interval for screening is the same as for average-risk individuals. For persons with two or more relatives who had sporadic colorectal cancer or a relative who had colorectal cancer at age 60 or less, initial screening by colonoscopy may be appropriate.

Individuals in a family with FAP and HNPCC should be referred to special centers for detailed counseling, genetic testing and tailored screening program. Locally, the Hong Kong Hereditary Gastrointestinal Cancer Registry was established in 1995 under the Departments of Surgery and Pathology, Queen Mary Hospital, The University of Hong Kong and provides these services (http://www.generations.hk.com or Tel: 2855-4911).
Screening Methods

Program of Fecal Occult Blood Tests
Annual or biannual fecal occult blood test (FOBT) is one of the earliest and most widely studied methods for screening of colorectal cancer. It has been shown that annual fecal occult-blood testing program decreased the 13-year cumulative mortality from colorectal cancer by 33 percent. A review of FOBT trials found that reductions in mortality in the annually screened group ranged from 14 to 37 percent.

There are two main types of FOBT: the guaiac tests and the immunochromatographic tests. Guaiac test may react to peroxidase in the feces besides to the peroxidase activity of heme. Therefore, the specificity may be affected by diet containing fruit, vegetables, and red meat, or the presence of vitamin C and the concurrent intake of aspirin. This has led to compliance problems with dietary restriction or false positive/negative results. Immunochromatographic test depends on antibodies specific for human hemoglobin, albumin, or other blood components. It has the advantage of not requiring dietary restrictions, as well as having a higher degree of selectivity for colorectal compared with gastric bleeding. This could be more practical in some population groups. Both types of tests have extensive data on performance, but the best FOBT that fulfills the needs for all population may not be available. A lot of local factors have to be taken into account, including dietary habits, resources for colonoscopy, compliance, and cost-effectiveness.

Persons with positive tests for fecal occult blood should be referred for complete colonic evaluation, ideally using colonoscopy. Because of the relatively low sensitivity especially since most small and medium-sized adenomas do not bleed, performing the test annually in a structured "Program" is very important, which however, may affect patient's compliance. Moreover, high false positive rate of some FOBT kits is one of the major shortcomings. This means that some disease-free persons will undergo unnecessary colonoscopy with its attendant risks and stresses.

Flexible Sigmoidoscopy
Approximately one half to two thirds of colonic neoplasms are located in the distal 60 cm of the colon. Flexible sigmoidoscopy to 60 cm therefore detects approximately 50% of all adenomas and cancers, and nearly 100% of neoplasms within reach of the sigmoidoscope. The sensitivity is lower if the full 60 cm is not examined. More randomized control study is needed to assess the reduction in mortality in screening by flexible sigmoidoscopy.

Combined Flexible Sigmoidoscopy and Fecal Occult Blood Tests
Combining sigmoidoscopy and fecal occult blood tests overcomes some of the disadvantages of each method and is endorsed by the American Cancer Society and other groups. The combination of FOBT and sigmoidoscopy may detect more cases of cancer and more large polyps than either test alone, but the additional benefits and potential harms of combining the two tests are uncertain. FOBT should precede sigmoidoscopy because a positive result is an indication for colonoscopy.

Double Contrast Barium Enema (DCBE)
Barium enema has been used as a screening test. The reported sensitivity and specificity for detecting colonic lesions is variable, being higher for larger lesions and cancers. DCBE is more sensitive than flexible sigmoidoscopy, fecal occult blood tests, or the combination, but less sensitive than colonoscopy. Recently, DCBE has been added to the recommendation list for average-risk individuals. If the rectosigmoid area is poorly visualized on barium enema, flexible sigmoidoscopy should be done as well.

Colonoscopy
Colonoscopy is the most sensitive and specific method currently available for identifying adenomatous polyps and carcinomas of the colon. It allows removal and histologic examination of tissue and can detect causes of occult blood loss other than polyps and cancers. Colonoscopy as an initial screening examination for individuals at average risk is now being carefully examined by several ongoing studies. It is at present not widely advocated because of the cost and the small risk that it poses for the patient (serious morbidity from 0.03% to 0.17%, mortality around 0.02%). Colonoscopy also requires highly trained personnel, overnight bowel preparation, sedation and longer recovery time. In addition, colonoscopy is not yet widely accepted by the general population, thus affecting the feasibility of using this as a universal screening method. Colonoscopy is recommended when findings on an initial screening examination (flexible sigmoidoscopy or fecal blood occult blood test) are positive and as an initial screening test for certain high-risk groups.
**Virtual Colonoscopy**

Virtual colonoscopy (or CT colography) is an X-ray technique using high-speed computerized axial tomography scanning to obtain multiple two-dimensional images of the colon and the abdomen. Patients are scanned as for a routine abdominal CT in both supine and prone position, with gas filling of the colon via a rectal tube, similar to DCBE. A 3-dimensional motion picture can be constructed in the computer allowing visualization and examination of the colon similar to that of a colonoscopy. It may be able to replace colonoscopy as a screening test for polyps and cancers with future technological advancement. This same principle is being investigated using magnetic resonance imaging units.

**Stool for Tumor DNA Detection**

Colorectal cancer cells with abnormal DNA mutation are shed into the stool. Such alterations provide a theoretic advantage over conventional screening methods, such as FOBT, for cancer detection because they reflect a qualitative rather than quantitative difference between the normal and neoplastic states. Preliminary studies using three molecular markers TP53, BAT26, and K-RAS were able to detect 71% of patients with colorectal cancer and 92% of patients whose tumors had DNA alteration. The best way to use molecular tests in conjunction with conventional screening modalities will have to be explored.

**Current Status and Difficulties**

Poor awareness among the public and the health care providers remain the major obstacle to colorectal cancer screening. Only the United States and Germany provide national free FOBT screening program, but the participation rate for eligible individuals is around 15% only. In other countries where screening program is a fee for service activity, a multi-disciplinary approach including key professional societies, the media, industry, and public advocacy groups need to work together to increase public awareness as well as government support.

**Conclusion**

Colorectal cancer is an increasing health care burden in Hong Kong and Worldwide. There are evidence-based screening recommendation guidelines by various professional organizations on this issue. Organized screening programs could significantly reduce mortality associated with colorectal cancer. Health care providers should take up a more active role. For this killing disease, any screening is better than no screening at all.
Management of Malignant Colorectal Polyps
Samuel KWOK
Specialist in General Surgery, Hong Kong Sanatorium & Hospital

Introduction
Carcinoma of colon is one of the leading cause of death worldwide. It is well known that improved survival of patients with carcinoma of colon depends on early detection of the disease at an earlier stage which led to the emphasis on screening with various tests. The increasing number of diagnostic colonoscopies will lead to an increasing number of endoscopic polypectomies. It is now being recognized that most cancer of the colon or rectum develop from an initially benign adenomatous polyp. The search for early carcinoma of the bowel has increased since we recognized the adenoma-to-cancer sequence. Finding a localized lesion is of prime importance because survival is dependent on the extent of invasion. Whereas dysplastic polyps can be safely cured by an adequate endoscopic polypectomies, cancer of the bowel will almost nearly require a surgery for cure. The management of malignant polyps, however is less well defined and may range from endoscopic polypectomy to curative surgery depending on the general well being of the patient and the recurrence and lymph node metastasis potential of the polyps.

Definition of a Malignant Polyp
A polyp is considered malignant when the carcinomatous cell penetrates into or through the muscularis mucosae, and when the carcinomatous cell contained solely within the muscularis mucosae, it is termed carcinoma in situ. Carcinoma in situ does not metastasize because no lymphatics are present above the muscularis mucosae. Complete removal of the polyps with carcinoma in situ is all that is required for a cure.

Morphology
A polyp can be divided into pedunculated or sessile morphologically. A polyp is pedunculated when the length of the stalk is greater than its diameter. The incidence of lymph node metastasis has been studied by several authors and the results are tabulated as below:

<table>
<thead>
<tr>
<th>LN involvement</th>
<th>Pedunculated (%)</th>
<th>Sessile (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nivatvongs</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Wolff</td>
<td>4.5</td>
<td>10.2</td>
</tr>
<tr>
<td>Grinnell</td>
<td>11</td>
<td>23</td>
</tr>
</tbody>
</table>

It is apparent from the above table that sessile polyp is associated with a higher rate of lymph node involvement. In addition, sessile lesions with invasion are more likely to contain unfavourable histologic features than pedunculated lesion. Together with the fact that sessile polyps are technically more difficult to be removed endoscopically and very often the margin of resection cannot be adequately determined due to the piecemeal removal of the polyp, many clinicians are more eager to treat sessile polyps by surgical resection in a patient with average operative risk.

Size
Whereas as the size of the polyp increase, the incidence of finding an invasive component in a polyp increase. However, this has not been a universal finding, Stryker et al. had found that most polyps with invasive carcinoma were only 1.0 to 1.4 cm in diameter. In addition, Haggitt et al. found no statistically significant correlation between polyp size and the potential for an adverse outcome. Therefore a small polyp shall not be taken less seriously and suspicion for invasive carcinoma in a polyp shall remain high regardless of the size of the polyp.

Level of Invasion
Haggitt, in 1985 stratified a malignant polyp into 5 levels of invasion according to the depth of invasion and were shown as below:
Level 0, carcinoma in situ;
Level 1, invades the muscularis mucosae but is limited to the head;
Level 2, invades the neck;
Level 3, invades the stalk; and
Level 4, invades the submucosa of the bowel wall below the polyp and above the muscularis propria.
Invasive carcinoma within a sessile polyp is, by definition, level 4 of invasion. In a study by Nivatvongs et al., the number of adverse outcome (residual or involved lymph nodes or recurrent disease) related to the level of invasion was 0/22, 0/3, 0/13, 13/113 for level 1, 2, 3, 4 respectively. Others had reported a similar trend of result and it was advised that all level 4 tumors should be resected whenever possible because of a high association with an adverse outcome.

**Margin of Resection**

Unlike in other cancers such as colorectal or gastric etc., the definition of adequate margin for endoscopic resection of a malignant polyp is less well defined. In most of the time, it is reported as + ve or - ve margin. It is believed that involved margins are a marker for residual disease. However, when the margin of resection is clear, an adverse outcome is still possible as shown by Fucini et al. where 2 out of 17 patients who had clear resection margin were found to have local recurrent disease at follow up.

Therefore it is advised to have follow up study of the polyp even when the resection margin is clear. In addition, it is worthwhile to mention that even if the resection margin of the malignant polyp is reported as involved, residual disease may not be present due to the electrocautery effect during polypectomy, however, it is impossible to differentiate the two situations and would recommend surgery.

**Degree of Differentiation**

Tumor differentiation may be graded as 1 to 3 where grade 1 is a well differentiated carcinoma, grade 2 as a moderately differentiated carcinoma and grade 3 as a poorly differentiated carcinoma. It had been found by several authors that grade 3 lesions had a high incidence of an adverse outcome and therefore would recommend a standard operative resection whenever possible.

**Venous and Lymphatic Invasion**

Venous and lymphatic invasion had been considered a histologic factor for an adverse outcome although in all series the number of cases had been small. Occasionally the difference between the two cannot be made and they are considered together as vascular invasion. Venous invasion predisposes to lymph node metastasis and venous invasion predisposes to haematogenous spread of the disease. In addition the presence of vascular invasion frequently associates other prognostic factors but whether these other risk factors are the cause or merely additive to the risk of an adverse outcome is unknown. What is appreciated is that the presence of vascular invasion denotes a high risk for an adverse outcome.

**Conclusion**

As shown above, the risk factors for an adverse outcome for a malignant colorectal polyp includes level 4 of invasion of the carcinoma, grade 3 differentiation of the carcinoma, a positive margin after endoscopic resection and a polyp with vascular invasion. Patients whose malignant polyps with the above risk factors should be considered standard operative resection when possible after balancing the risk of the procedures. In patients whose malignant polyps without these unfavourable findings may be treated by endoscopic polypectomy alone and subsequent surveillance colonoscopy.
In Hong Kong, colorectal cancer has an incidence only second to lung and accounts for over 1200 death a year. Management of colon and rectal cancer is not identical because of anatomical difference of tumor sites which leads to difference in relapse pattern. Relapse in colon cancer is frequently at distant sites for which the use of chemotherapy seems appropriate. However, locoregional relapse is common in rectal cancer and it is amendable to radiotherapy. Considerable advances in surgical techniques, chemotherapy and radiotherapy in recent years have resulted in improvement in survival as well as quality of life. Postoperative chemotherapy for advanced cancer of colon has been shown to increase survival and has become standard of care. Neoadjuvant chemo-radiation for low rectal tumor increases the chance for anal sphincter preservation operation. Postoperative chemo-radiation for rectal cancer resulted in both reduction of local recurrence and mortality. These showed that optimum management for this group of patients requires close collaboration between surgeons, oncologists and family physicians.

Cancer of Colon
About 80% of patients on presentation can be rendered disease free macroscopically by resection, however, 50% of them developed recurrence. Adjuvant chemotherapy is used to eradicate microscopic residual disease before it establishes itself to become a recurrence.

Consistent evidence on the value of adjuvant chemotherapy for stage III cancer of colon has been demonstrated by multiple large randomized controlled trials. First generation adjuvant chemotherapy tested the combination of 5-fluorouracil (5FU) and an antihelminthic, levamizole (LEV). The first randomized trial demonstrating disease free and survival benefit was reported by the North Central Cancer Treatment Group trial. This result was later confirmed by a large Intergroup Trial (INT-0035). Patients with stage III disease were randomised to receive no treatment postoperative, one year of levamizole alone or one year of 5FU and levamizole. After a follow up of 6.5 years, there was a significant reduction of recurrence rate by 40% and death rate by 33% for patients treated with 5FU and levamizole combination. This trial has contributed significantly to a National Institutes of Health consensus in 1990 which recommended that patients with Stage III colon cancer should receive adjuvant therapy with 5-fluorouracil (5FU) and levamizole.

More recent trials tested the combination of 5FU with leucovorin, an effective modulator of 5FU. O’Connell and colleagues showed that 6 months of 5FU with low dose leucovorin (LV) could significantly reduce mortality and relapse. Direct comparison of commonly used regime in a large intergroup trial showed similar efficacy for 12 months of 5FU/Levamizole and 6 months of 5FU/low dose LV. The late 1990’s saw the introduction of novel agents with superior efficacy in patients with metastatic colorectal cancers and contemporary trials testing these agents in the high risk stage III setting are now underway internationally as well as locally. (Ongoing trials MOSAIC, NSABP C-07, QMH.HK1.FLICA and PETACC-3)

The picture is less clear for stage II disease. Most trials failed to showed significant survival improvement. Two recent meta-analyses showed contradicting conclusions. IMPACT B2, a pooled-analysis of five trials, showed no benefit while a similar analysis on four trials from National Surgical Bowel and Breast (NSABP) Project showed similar efficacy of adjuvant chemotherapy for stage II as in stage III disease. Most believe that if benefit does exist, it is likely to be small. Adjuvant chemotherapy is not considered standard and seems unnecessary for all stage II patients. However, it is reasonably to consider it for patients with high-risk features, for example, tumor invasion into adjacent organ, presentation with obstruction or perforation.
Cancer of Rectum

Management of rectal cancer exemplifies the application of multi-modality therapy to optimize result. Surgical resection remains the cornerstone of care but there remain problems with local recurrence and distant relapse as well as preservation of anal sphincter in patients with low rectal cancers.

The use of combined chemotherapy and radiotherapy has been shown in randomized trials to reduce local recurrence and to improve survival for post operative stage II and III rectal cancer. These trials contributed to the 1990 National Institutes of Health consensus statement, Combined postoperative chemotherapy and radiation therapy improves local control and survival in stage II and III patients and is recommended. With recent advancement of surgical technique using total mesorectal excision (TME), postoperative local recurrence is markedly reduced to approximately 10%. This has challenged the need for adjuvant radiotherapy. It is a policy of our unit to withhold adjuvant radiotherapy if TME has been performed. This practice is based on the local experience reported by the Queen Mary Hospital Colorectal Group which showed a 5-year actuarial local recurrence rate of 11.2% in patients with double-stapled low-anterior (TME) resection.

Although adjuvant chemoradiation has been shown to be effective, this is given mostly in the postoperative setting. This means that a patient with distal rectal tumor would have little option other than abdomino-perineal resection (APR) with a permanent colostomy. Chemoradiation given preoperatively (neoadjuvant chemoradiation) has the benefit of down-sizing the tumor. This may allow sphincter preservation for distal tumor and improve respectability for locally advanced tumor. Our local data showed that for patients referred for neoadjuvant chemoradiation, about 60% of patient was able to have sphincter preserved. The introduction of novel agents with more potent radiation-sensitizing property as well as proven superior efficacy in the eradication of metastatic disease further complicates the picture. Numerous studies, both international and local, are now underway and hopefully further advances in rate of sphincter-preservation can be achieved with these agents.

Preoperative radiation alone without chemotherapy was tested in the Swedish Rectal Cancer Trial and was shown to yield, not only a reduction of local recurrence but also improvement in survival. Adopting it as a standard, however, will need further confirmation of efficacy from further trials.

Table 1. Summary table for adjuvant postoperative therapy for colon cancer

<table>
<thead>
<tr>
<th>Stage</th>
<th>Adjuvant chemotherapy</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I (Dukes’ A)</td>
<td>No benefit</td>
<td></td>
</tr>
<tr>
<td>Stage II (Dukes’ B)</td>
<td>Controversial</td>
<td>May benefit high risk patients e.g. perforation, obstruction and tumor involvement of other organ (T4)</td>
</tr>
<tr>
<td>Stage III (Dukes’ C)</td>
<td>Standard of care. Consider either combination of 5FU with levamizole or 5FU with leucovorin</td>
<td>Reduce recurrence rate by 40%, death rate by 33%</td>
</tr>
</tbody>
</table>

Table 2. Long-term survival of colon cancer

<table>
<thead>
<tr>
<th>Stage</th>
<th>Long term survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>85-90%</td>
</tr>
<tr>
<td>Stage II</td>
<td>70-75%</td>
</tr>
<tr>
<td>Stage III</td>
<td>45-60%</td>
</tr>
<tr>
<td>Stage IV</td>
<td>&lt;5%</td>
</tr>
</tbody>
</table>

Cancer of Rectum

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Preoperative radiation alone without chemotherapy was tested in the Swedish Rectal Cancer Trial and was shown to yield, not only a reduction of local recurrence but also improvement in survival. Adopting it as a standard, however, will need further confirmation of efficacy from further trials.

Table 3. Summary table for adjuvant postoperative therapy for rectal cancer

<table>
<thead>
<tr>
<th>Stage</th>
<th>Adjuvant therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I (Dukes’ A)</td>
<td>No role</td>
</tr>
<tr>
<td>Stage II (Dukes’ B)</td>
<td>Postoperative chemoradiation; Preoperative chemoradiation or Preoperative radiation followed by adjuvant chemotherapy</td>
</tr>
<tr>
<td>Stage III (Dukes’ C)</td>
<td>Consider preoperative chemoradiation with aim for sphincter preservation or to improve respectability followed by postoperative chemotherapy</td>
</tr>
</tbody>
</table>
Principles of Radiotherapy
Modern radiotherapy utilizes high-energy radiation, usually in the form of photons or less commonly in electron. High-energy radiation is generated either by radioactive decay as with Cobalt or more commonly by linear accelerators. Lethal effect of radiation is mediated through DNA damages caused by these high-energy particles. These DNA strand breaks ultimately cause reproductive death of tumor cells and this is believed to be the basis of tumor control.

Radiotherapy is commonly given in multiple fractions of treatment. This is done to achieve high rate of tumor control with acceptable short term and long-term side effects. Side effect of radiotherapy is highly dependent on the type and volume of normal tissues included in the radiation field. The principle of field determination is to include tumor with its biological borders and setup margins while, at the same time, to keep exposure to any critical normal organs nearby to a minimum.

In patients receiving pelvic radiation, there are a number of ways to reduce toxicity. Treating patient in a prone position with a belly board and to treat with fully distended bladder will exclude as much small bowel in the radiation fields as possible. By using multiple fields and standard or even smaller fraction size will further reduce toxicity.

Metastatic Disease
Isolated liver metastases is not uncommon at presentation or at follow up. These patients should be screened for other systemic involvement. If truly isolated liver metastasis is found and the patients are considered physically fit, they should be referred for consideration of hepatic tumor excision. Complete resection of these metastases in carefully selected patients, can result in respectable 5 years survival of 24-38%. Known poor prognostic factors for this group of patients include elevated preoperative CEA, more than 4 metastases and greater than 5 cm liver metastasis. Alternatively, patients with inoperable liver metastases can be referred for cryosurgery or radiofrequency ablation, which may result in some long-term survivals.

For patients not amendable to local therapy, outlook is poor with few living beyond the third year. Chemotherapy, however, can be considered for patients with good performance status and it's been shown to improve quality of life and to offer moderate prolongation of life. Traditional use of the combination of 5FU and leucovorin has been challenged in recent years with a proliferation of novel agents either used alone or in combination. Irinotecan, a topoisomerase I inhibitor, combined with 5FU and leucovorin had been shown in two randomized controlled trials to be superior in response and survival than 5FU and leucovorin. However, improvement of survival was only by 2 months on average. Oxaliplatin, a third generation platinum which has little bone marrow or renal toxicity, is another agent which has been studied extensively in recent years and results has been encouraging. Capecitabine, an orally active 5FU, was shown to be equally active as 5FU and leucovorin combination with few overall side-effects. However, Capecitabine was associated with more hand-foot syndrome that is characterized by pain, redness, scaling or shedding of the skin of the palms and soles. Chemotherapy for metastatic disease should not be considered as routine and each patient should be assessed individually, bearing in mind the balance of benefits and risks of palliative chemotherapy.

Looking after Patients with Advanced Disease
Patients with metastatic disease are considered incurable except a small subgroup with insolated liver metastases who achieve complete excision. Even though progression is inevitable for all, most have a variable duration with relatively symptom free period before entering into a phase of deteriorating body functions and performance status.

Building a good rapport and have a trusting relationship with patient and his/her family will go a long way in helping them to accept and adjust to the disease. Avoid the notion that "there is nothing I can do" as a doctor can always do something to help these patients, such as symptom control, psychological support, referral to suitable services.

Maintaining hope is very important. It is not a hope of cure but a hope of maintaining symptom free for longer, a hope for responding to palliative treatment.
even a hope of entering into clinical trials should new drugs become available. Median survival should not be taken as a definite extent of an individual's survival because by definition, 50% of patients will live longer. There are many fears faced by these patients and dispelling those can often improve their quality of life. Taking an active approach to discuss issues like cancer being non-contagious so an elderly patient can feel safe to share meals with other family members and not to worry to "transmit" the disease to his/her grandchild by holding them. Other common worries are fears of abandonment by health care professionals and family, fears of over dependent on medications especially on analgesia, fear of sudden deterioration and is described as carrying a "time bomb". Sudden deterioration is not common and most patients run an initially steady course before becoming progressively weak, most patients can be encouraged to remain active. There is no reason that they cannot take short tours and a support to go back to China to visit relatives is often very much welcomed.

Pain is the most common symptom and it can be, at least partially, controlled by following simple analgesic ladder. One should not forget that constipation is the most common side-effect with both weak and strong opioids. Prophylactic laxatives are a must alongside with prescription of Morphine, Methadone, Fentanyl, Codeine, Dologesic, Doloxene, Doloxene Co and DF 118.

Palliative care services are in place or being developed in major cancer centers in Hong Kong. Furthermore, there are 12 designated hospices providing wide range of services including in-patient cares and with most providing home care. Being aware of these services and to utilise them can often enhance the quality of life of these group of patients.

The Faculty of Dentistry at the University of Hong Kong has served with distinction in all areas of teaching, research, patient care and service to the University, the profession and the community. The Faculty offers a variety of postgraduate programmes which continue to generate a high level of interest amongst dental practitioners both locally and overseas. The following full-time (FT) and part-time (PT) taught postgraduate programmes are open to admission in 2003-2004:

**Master of Dental Surgery** in the fields of: Endodontics (2 yr FT or 4 yr PT); Paediatric Dentistry (2 yr FT); Periodontology (2 yr FT); Prosthodontics (2 yr FT or 4 yr PT); Public Health Dentistry (2 yr FT or 4 yr PT); and Oral and Maxillofacial Surgery (3 yr FT)

**Master of Orthodontics** (3 yr FT)

**Postgraduate Diploma in Dental Surgery** in the fields of: Dental Public Health; Oral Radiology; Oral Surgery; and Paediatric Dentistry (all 1 yr FT or 2 yr PT)

**Postgraduate Diploma in General Dental Surgery** (2 yr PT)

**Advanced Diplomas in Endodontics; Orthodontics; Paediatric Dentistry; Periodontology; and Prosthodontics** (all 1 yr FT or 2 yr PT)


Research postgraduate programmes are also available for Master of Philosophy (2 yr) and Doctor of Philosophy (3 and 4 yr), again in various subject areas.

Annual Fee for 2003-2004 (subject to University approval):

**Taught Postgraduate Programmes (excluding Orthodontics and PDipGDS)**: HK$100,000 (full-time) and HK$50,000 (part-time)

**Master of Orthodontics**: HK$156,000 (full-time only)

**Advanced Diploma in Orthodontics**: HK$156,000 (full-time) and HK$78,000 (part-time)

**Postgraduate Diploma in General Dental Surgery**: HK$55,000 (part-time only)

**Research Postgraduate Programmes**: HK$42,100 (full-time) and HK$28,070 (part-time)


For inquiries, please contact the Faculty: Tel: (852) 2859 0347, Fax: (852) 2517 0544, E-mail address: dental@hkusua.hku.hk