

## Prevention

General population advice:

- D** Maintain a BMI close to the lower end of the normal range.
- D** Eat at least five portions of vegetables and fruits each day and eat relatively unprocessed cereal with every meal. Keep consumption of red meat to less than 500 g per week and avoid processed meat.
- D** Limit alcohol consumption to no more than two drinks (four units) per day for men and one drink (two units) per day for women.
- B** Avoid smoking
- D** Be physically active (equivalent to brisk walking) for a minimum of 30 minutes five days a week is recommended for the whole population.

## Screening

- D** All patients with ulcerative colitis or Crohn's colitis of 10 years duration should undergo a screening colonoscopy.
- D** Chromoendoscopy with pan-colonic dye-spraying and targeted biopsy of abnormal areas is advised for detecting dysplasia. If chromoendoscopy is not used, 2-4 random biopsies should be taken from every 10 cm of the colon, in addition to biopsies of any suspicious areas.
- D** Surveillance colonoscopies should be performed yearly, 3-yearly or 5-yearly according to risk-stratification.
- D** Colectomy should be performed for high-grade dysplasia, cancer, any dysplasia-associated lesion/mass that cannot be entirely resected endoscopically, and low-grade dysplasia confirmed by two expert gastrointestinal pathologists.
- D** Patients who have undergone colonoscopic polypectomy for adenomas should be offered follow-up colonoscopy based on risk stratification.
- D** Patients with one or two adenomas <1 cm in size without high-grade dysplasia are at low risk and only require follow-up colonoscopy at five years if other factors indicate the need for further surveillance. If no polyps are found, further surveillance is not required.
- D** The presence of either 3-4 small adenomas (<1 cm), or one adenoma >1 cm in size confers an intermediate risk, and surveillance colonoscopy should be undertaken at three years. If surveillance colonoscopy is subsequently normal on two consecutive occasions, it may cease.
- D** Patients with ≥5 small adenomas, or ≥3 adenomas with at least one polyp ≥1 cm in size are at high risk, and should undergo colonoscopy at one year.

## Impact of colorectal cancer on patients and their families

- D** Information about local support services should be made available to both the patient and their relatives.
- B** Clinicians must be aware of the potential for physical, psychological, social and sexual problems after all colorectal cancer surgery, including sphincter-saving operations.
- D** Patients should be given clear information about the potential risks and benefits of treatment, in order that they can make choices.
- ✓ All patients, newly diagnosed or with a suspected diagnosis of colorectal cancer, should have access at diagnosis to a clinical nurse specialist for support, advice and information.
- ✓ All patients who may require stoma formation (permanent or temporary) should be referred and assessed by a stoma nurse specialist before admission to hospital.

## Genetics

- B** Individuals at risk or known to be carrying a CRC syndrome gene mutation should be offered colonic screening according to the BSG/ACPGBI guidelines.
- D** Family history should be used to inform decision making about colonoscopic screening in asymptomatic individuals.

## Primary Care and Referral

- B** Patients over the age of 40 who present with new onset, persistent or recurrent rectal bleeding should be referred for investigation.
- D** For patients under the age of 40 with low-risk features and transient symptoms a watch and wait policy is recommended.
- C** Review of the patient by a regional clinical genetics service is recommended for accurate risk assessment if family history of colorectal cancer is the principal indication for referral for investigation.
- B** General practitioners should perform an abdominal and rectal examination on all patients with symptoms indicative of colorectal cancer. A positive finding should expedite referral, but a negative rectal examination should not rule out the need to refer.
- B** All symptomatic patients should have a full blood count. In cases of anaemia the presence of iron deficiency should be determined.
- B** All patients with unexplained iron deficiency anaemia should be referred for endoscopic investigation of upper and lower gastrointestinal tracts.

## Diagnosis

- ✓ Where colorectal cancer is suspected clinically, the whole of the large bowel should be examined.

## Endoscopy

- D** Colonoscopy is recommended as a very sensitive method of diagnosing colorectal cancer, enabling biopsy and polypectomy.

## Radiological diagnosis

- C** CT colonography can be used as a sensitive and safe alternative to colonoscopy.
- D** Minimal preparation CT is an alternative to CT colonography in frail elderly patients.

## Initial staging

- D** All patients with colorectal cancer should be staged by contrast enhanced CT of the chest, abdomen and pelvis unless the use of intravenous iodinated contrast is contraindicated.
- C** MRI of the rectum is recommended for local staging of patients with rectal cancer.
- C** Endoluminal US can be used in a complementary role with MRI in staging patients with early rectal cancer.

## Positron Emission Tomography

- C** In patients with apparently organ-restricted liver or lung metastases (either at primary presentation or during follow up) who are being considered for resection, a PET/CT scan should be considered prior to the administration of cytoreductive chemotherapy. The identification of occult metastatic disease prior to resection or chemotherapy may render resection inappropriate or may alter patient's management.

- D** FDG PET/CT should be used in the evaluation of patients with raised tumour marker CEA with negative or equivocal conventional imaging or assessment of possible pelvic recurrence and pre-sacral mass following treatment.

## Surgery

### Preoperative staging

- C** Complete colonic examination by colonoscopy, CT colonography or barium enema should be carried out, ideally preoperatively, in patients with colorectal cancer.

### Preoperative preparation

- D** Patients undergoing surgery for colorectal cancer should have venous thromboembolism prophylaxis and antibiotic prophylaxis consisting of a single dose of antibiotics providing both aerobic and anaerobic cover given within 30 minutes of induction of anaesthesia.
- B** Preoperative mechanical bowel preparation is recommended for patients undergoing restorative rectal resection.

### Techniques in colorectal cancer surgery

- C** Mesorectal excision is recommended for rectal cancers where the patient is fit for radical surgery. The mesorectal excision should be total for tumours of the middle and lower thirds of the rectum, and care should be taken to preserve the pelvic autonomic nerves wherever this is possible without compromising tumour clearance.
- C** When an abdominoperineal excision of the rectum is required for very low rectal cancers which cannot be adequately excised by a total mesorectal excision, then an extralevator approach to abdominoperineal excision of the rectum is recommended.
- C** It is recommended that colon cancer is treated with radical surgery involving complete mesocolic excision and flush ligation of the colonic vessels.
- C** With a low rectal anastomosis, consider giving a defunctioning stoma.
- C** With a low rectal anastomosis after TME, consider a colopouch.
- B** After a low rectal anastomosis (ie after a TME) a defunctioning stoma should be constructed unless there are compelling reasons not to do so.

### Laparoscopic surgery for colorectal cancer

- C** The relative risks of operative morbidity and recurrence must be carefully weighed and explained fully to the patient so that an informed decision can be made regarding local excision and rectal cancer.
- C** Further surgery for pedunculated polyp cancers that have been removed endoscopically is indicated if:
  - there is histological evidence of tumour at, or within 1 mm of, the resection margin;
  - there is lymphovascular invasion;
  - the invasive tumour is poorly differentiated.
- A** Laparoscopic and open surgery can be offered for resection of colorectal cancer.
- C** Mechanical large bowel obstruction should be distinguished from pseudo-obstruction before surgery.
- C** Patients with malignant obstruction of the large bowel should be considered for immediate resection.
- A** If immediate reconstruction after resection is deemed feasible, segmental resection is preferred for left-sided lesions.

**B** Where facilities and expertise are available, colonic stenting can be considered for the palliation of patients with obstructing colon cancer, ie in those who are not fit for immediate resection or in those with advanced disease. The risk of colonic perforation should be taken into account.

#### Surgery for advanced disease

**D** Patients with liver and lung metastases should be considered for resection or, in the case of liver disease, in situ ablation.

**D** In patients with advanced local or recurrent disease, careful consideration should be given to surgical excision or palliative intraluminal procedures.

#### Specialisation and work load in colorectal cancer surgery

**B** Surgery for colorectal cancer should only be carried out by appropriately trained surgeons whose work is audited. Low rectal cancer surgery should only be performed by those trained to carry out TME.

#### Pathology

**D** Pathological reporting of colorectal cancer resection specimens should include information on: tumour differentiation, staging (Dukes and TNM systems), margins (peritoneal and CRM) and extramural vascular invasion.

**B** All reporting of colorectal cancer specimens should be done according to, or supplemented by, the Royal College of Pathologists' minimum data set.

#### Chemotherapy and radiotherapy

##### Adjuvant chemotherapy

**A** All patients with Stage III colorectal cancer should be considered for adjuvant chemotherapy.

##### Management of patients with metastatic colorectal cancer

✓ The optimal treatment strategy for patients with metastatic colorectal cancer should be determined following discussion at an MDT meeting and is dependent on the site and extent of metastatic disease and the performance status, organ function and comorbidity of the patient.

✓ All patients with liver-only metastases should be discussed at an MDT meeting which includes a liver surgeon in order to determine resectability.

**D** Surgical resection should be considered for all patients with resectable liver metastases.

**D** Patients with resectable liver metastases should be considered for perioperative chemotherapy with a combination of oxaliplatin and 5-FU/leucovorin for a total period of six months.

**D** Patients with unresectable liver metastases should be considered for downstaging chemotherapy using a combination of oxaliplatin (or irinotecan) and 5-FU/leucovorin.

**A** All patients with metastatic colorectal cancer should be considered for chemotherapy.

**A** Combination treatment with 5-FU/leucovorin/oxaliplatin or capecitabine and oxaliplatin or 5-FU/leucovorin/irinotecan are the preferred options in patients with good performance status and adequate organ function.

**D** Consider raltitrexed for patients with metastatic colorectal cancer who are intolerant to 5-FU and leucovorin, or for whom these drugs are not suitable.

**A** Second line chemotherapy should be considered for patients with metastatic colorectal cancer with good performance status and adequate organ function.

**A** Irinotecan should be used as second line therapy following first line oxaliplatin (or vice versa).

**B** Cetuximab should be considered in combination with 5-FU/leucovorin/oxaliplatin or 5-FU/leucovorin/irinotecan chemotherapy for patients with unresectable liver metastases if patients fulfil the SMC criteria.

#### Management of patients with rectal cancer

✓ Patients with rectal cancer who are potential surgical candidates need to be appropriately staged with MRI of the pelvis and discussed by an MDT preoperatively. The risk of local recurrence based on MRI findings should be ascertained.

**A** Patients considered to have a moderate risk of local recurrence with total mesorectal excision surgery alone, and in whom the CRM is not threatened or breached on MRI, could be considered for preoperative radiotherapy (25 Gy in five fractions over one week) and immediate TME surgery.

**A** Patients who require downstaging of the tumour because of encroachment on the mesorectal fascia should receive combination chemotherapy and radiotherapy, (BED >30 Gy) followed by surgery at an interval to allow cytoreduction.

#### Follow up of patients treated for colorectal cancer

**A** Patients who have undergone curative resection for colorectal cancer should undergo formal follow up in order to facilitate the early detection of metastatic disease.

#### Palliative care & the management of symptoms in advanced disease

✓ Patients with advanced colorectal cancer whose physical or emotional symptoms are difficult to control should be referred to a specialist in palliative care without delay.

**D** Medical measures such as analgesics, antiemetics and antisecretory drugs should be used alone or in combination to relieve the symptoms of bowel obstruction.

This Quick Reference Guide provides a summary of the main recommendations in SIGN 126 - Diagnosis and management of colorectal cancer. Recommendations are graded A B C D to indicate the strength of the supporting evidence.

Good practice points ✓ are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: [www.sign.ac.uk](http://www.sign.ac.uk).

This Quick Reference Guide is also available as part of the SIGN Guidelines app.

