



Palliative care in colorectal and anal malignancies from diagnosis to death[✳]

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Abstract: Colorectal (CRC) and anal (AC) cancer, both lower gastrointestinal (GI) cancers vary in their presentation and treatment. Overall, the incidence of CRC has decreased. However, the incidence of CRCs in younger adults has increased over the last 5 years. The incidence of ACs has increased, too. Women are disproportionately impacted by AC which is frequently associated with human papilloma virus (HPV). Patients diagnosed with both cancers often experience multiple symptoms including pain, constipation, nausea, and vomiting. Psychosocial distress including embarrassment and shame often results from both the cancers itself as well as surgical procedures such as creation of ostomy. Palliative care (PC) is an emerging specialty that focuses on maximizing the quality of life (QOL) for patients through expert symptom assessment and management, psychosocial support, and improved communication around illness. The evidence to support earlier integration of PC has steadily increased over the last ten years. The literature shows that early involvement of PC for these populations can result in improved QOL, improved symptom control and decreased intensity of care at the end of life. This article will review the palliative needs of patients diagnosed with CRC and discuss how PC as a specialty is well poised to support these needs.

Keywords: Palliative care (PC); colon cancer; anal cancer (AC)

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Introduction

Background

Colorectal cancer (CRC)

Anal, rectal and colon cancers are categorized as lower gastrointestinal (GI) tract malignancies, but present and are treated extremely differently from each other. Both rectal

and colon cancers are most commonly adenocarcinomas and can present as locally advanced or metastatic disease (1,2). Rectal cancers are usually adenocarcinomas as well and are morphologically similar to colon cancers but are treated more similarly to ACs because of the low location in the GI tract. Combined chemotherapy and radiation may be used prior to surgery depending on stage of disease

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at presentation (3). CRC is the third most common type of cancer currently diagnosed in the United States across all genders (4). The incidence of CRC has declined since 2000, in large part due to improved cancer screening through colonoscopy. However, within the past 5 years, the incidence of proximal CRC cancers in younger adults (25–45 years old) has increased (4). The cause of this increase is a topic of much research but is likely related to mutations, predisposing syndromes and familial CRC (5). Most cancers diagnosed in this younger adult population are diagnosed at an advanced stage due to lack of routine screening in younger adults (6). Approximately 20% of patients with CRC have metastatic disease at diagnosis (7). Another 20–30% of patients eventually develop metastatic disease despite successful curative treatment of their primary tumor (5). Newer chemotherapeutic agents have been developed, as well as targeted therapy. Immune checkpoint inhibitors have been shown to be beneficial in a small percentage of patients who have a proficient mismatch repair disease (8). Because of improved therapeutics, patients are living longer with their disease even when disease is metastatic at presentation (1). Nonetheless, patients who live longer also have the potential to experience more physical and psychological symptoms throughout the course of their illness which can negatively impact quality of life (QOL) (9). Given the significant symptom burden, broad morbidity, and mortality for patients with CRC, National Comprehensive Cancer Network (NCCN) guidelines recommend early integration of palliative care (PC) for this patient population (10,11). Treatment usually includes surgery, followed, or preceded by chemotherapy to ensure the best possible chance of treatment success (1). Patients with metastatic disease are usually treated with palliative chemotherapy. Metastasectomy or locoregional therapy is usually reserved for rare cases when patients present with oligometastatic disease or liver only disease (12). Survival for metastatic colon cancer is improving, and routinely surpasses two and a half years (4).

Anal cancer (AC)

AC remains rare in the United States with approximately 10,000 people diagnosed yearly and 1,600 deaths yearly (4). Two-thirds of those diagnosed are women (13). ACs emerge from the squamous cell mucosa and are routinely mediated by the human papilloma virus (HPV) (14). Curable AC is treated with concurrent chemoradiation in a highly toxic and highly effective upfront regimen (14). Surgery

has little role in the treatment of ACs and it is reserved for salvage therapy in case of persistent or recurrent local disease (13). When metastatic at presentation, treatment of AC is palliative to ease symptom burden and prolong life, and this usually includes systemic chemotherapy or immunotherapy, targeted palliative radiation and rarely surgery for obstructive symptoms (15).

The incidence has climbed slowly but steadily over the past 20 years due to risk factors that include HPV, anal warts, having multiple sexual partners and smoking (16). Overall, treatment for AC is highly successful, with a 5-year survival rate of 66% for all patients (17). AC is likely to be diagnosed at early stages secondary to symptoms (14). When curable, AC is usually treated with an aggressive combination of chemotherapy and radiation that is highly effective and highly burdensome (16). Surgery may be a part of one's treatment plan and is often reserved for cases refractory to combined chemoradiation (15). Given the highly morbid treatments of AC, early integration of PC providers into the team of patients caring for those with AC can be extremely valuable for patients.

PC is defined by the World Health Organization as *“an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illness. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual”* (18). PC aims to maximize an individual's QOL and minimize the suffering of the patient and family. PC utilizes an interdisciplinary approach with the understanding that a sole physician is not adequately equipped to meet all care needs of a patient and family. While valuable for all patients with serious illness, PC as a specialty is uniquely poised to support patients with cancer and their families from diagnosis to death (19). Temel and colleagues published their landmark paper on the benefits of PC for patients with non-small cell lung cancer in 2010, setting the gold standard of early integration of PC into the routine care of patients with cancer, and this practice has been adopted by institutions worldwide and recognized as standard of care (11,20). The evidence for the benefits of PC in cancer patients has continued to grow over the last decade (19,21,22). PC teams excel in optimizing QOL, improving communication, assisting patients with transitions in care and supporting patients and families throughout the illness trajectory (20,23,24). Consequently, patients with cancer are increasingly referred to PC earlier

in their disease trajectory (25).

Rationale and knowledge gap

Historically, PC has been integrated later into the disease trajectory and typically coincides with an inpatient admission (21,26). Although inpatient PC consultations are effective at improving symptoms, assisting with transitions at the end of life, and with documentation of treatment preferences, there is a growing body of evidence that earlier integration of PC, specifically in the outpatient setting, is preferable because of the potential for broader impact (20,22). In addition, hospitalizations at end-of-life (EOL) for patients with cancer negatively impact a patient's QOL and have significant negative ramifications for hospitals and cancer centers regarding quality metrics (10,27-30). Outpatient PC may minimize hospitalizations for symptom management (20). Outpatient care can be provided in dedicated PC clinics, embedded in the oncology clinic, or even at home through a home health agency that provides high-quality home nursing-based PC (31). Embedded clinics provide both for direct patient support with real time consultation as well as informal guidance as providers are clustered together (32). Creating a system in which inpatient PC consultations lead to outpatient PC follow-up is also valuable in ensuring that the work done by the inpatient team is not an isolated event.

Barriers to integration of PC into the care of cancer patients occur in all patients with serious illness and cancer, but there are some barriers specific to patients diagnosed with cancer (33). Oncologists tend to refer patients to PC more for symptom management and may not be as familiar with the benefits of PC referral for non-symptom indications (34). Regional differences across the United States can also impact referral to PC; type of health care institution amongst CRC patients also affects referral patterns. The differences are particularly noted in adults with indications for emergent surgery. Heller *et al.* noted that only 4.2% of CRC patients who survived to hospital discharge after having an emergent surgical procedure had a PC consultation while admitted. PC consultation was twice as common in patients residing in the West as compared to the Northeastern United States (5.7% *vs.* 3.3%; $P < 0.01$) and in not-for-profit institutions *vs.* proprietary hospitals (4.5% *vs.* 2.3%; $P < 0.01$) (35). Finally, CRC patients are often managed by surgical oncologists who may have less familiarity with PC and therefore less apt to refer. Suwanabol *et al.* surveyed members of the American Society of Colon and Rectal Surgeons and noted the following

barriers to PC consultation: “*surgeon knowledge and training, communication challenges, difficulty with prognostication, unrealistic expectations on the part of the patient and family and systemic issues such as culture and lack of resources.*” (36). In an effort to integrate PC more consistently across cancer patients, institutions have developed models to both improve serious illness communication (SIC) and institute triggers to refer to PC (24,37).

Objective

In this article, we will discuss the integration of PC into the care of patients with both categories of lower GI tract malignancies and highlight the varied and important role that PC can play.

Recent developments in PC and CRC

A review of the recent literature on the intersection of PC and CRC has focused on several themes: the optimal timing of PC consultation, the impact of PC on intensity of care received by patients and the impact of PC on the patient experience. Although there is a dearth of evidence on the impact of referral PC for patients diagnosed with AC, there exists a growing body of evidence describing the benefits of PC referral for patients diagnosed with CRC (38-40). Referral to PC for patients diagnosed with CRC has been shown to result in a reduction in hospitalizations and increase the utilization of hospice care (41). Further early referral to PC seems to provide a greater impact than late referrals. Delisle *et al.* retrospectively reviewed the medical records of patients diagnosed with CRC who died between 2004 and 2012 to determine whether the benefits of PC were impacted by the timing of referral. Patients were categorized into four exposures: no referral to PC, early referral to PC (14–60 days prior to death), late referral to PC (<14 days prior to death) and very early referral to PC (>60 days prior to death). Patients with early and very early PC involvement experienced significantly decreased odds of dying in the hospital [odds ratio (OR) =0.21, 95% confidence interval (CI): 0.06–0.69, $P = 0.01$ and OR =0.11, 95% CI: 0.01–0.78, $P = 0.03$, respectively] and significantly lower health care costs (42). Additionally, referral to PC in patients diagnosed with CRC seems to result in a reduction of inappropriate health care utilization. Dumnui *et al.* retrospectively reviewed 277 cancer patients referred to their institutional PC program, of which 18.5% were diagnosed with CRC. They found that participants

who had received at least 100 days of PC utilized the emergency department (ED) less frequently (OR =0.23; 95% CI: 0.08–0.66; $P<0.01$) (43). This is consistent with the study published by Billiot who noted that referral to PC for patients diagnosed with hepatobiliary (HPB) and CRC was associated with fewer ED visits ($P=0.03$), hospital admissions ($P=0.0002$), and total inpatient hospital days ($P<0.0001$) per 30 days of life. They noted that referral to PC in their cohort was associated with “fewer emergency department visits, hospital admissions, and inpatient hospital days, and improved overall survival” (40). The evidence suggests that referral to PC improves the patient experience in patients diagnosed with CRC and increases advance care planning (ACP). Bischoff *et al.* noted that patients diagnosed with metastatic CRC in embedded outpatient PC clinics were more likely to name a surrogate, complete an advance care directive and have a more realistic understanding of the likelihood of cure (44). Ahmed described a PC pathway for patients diagnosed with advanced CRC and noted in their qualitative study that receipt of early PC (at least 3 months prior to death) resulted in an increased understanding of PC and improved cancer care (38).

Symptoms

Many patients diagnosed with CRC and AC have symptoms that are either not treated or sub-optimally treated (45). During a routine clinic visit, oncologists have numerous essential topics to cover, including details about the disease, treatment, side effects, testing, as well as symptom monitoring and goals of care. It can be a challenge to cover each of these topics in every visit and integrating PC into the care of cancer patients has been shown to improve symptom burden for the patients, including pain and non-pain symptoms (20). When symptoms are effectively controlled, patients feel better, are more functional, and have a higher QOL (20,23). Improved symptom control also helps patients tolerate cancer therapies more easily, which in turn improves compliance with life-prolonging treatments and possibly survival (20). The distressing symptoms associated with CRC include pain, nausea and vomiting, depression, anxiety, and spiritual distress (39). Walling *et al.* surveyed patients with incident lung cancer and CRC and found that at least 93.5% reported at least one symptom in the 4 weeks prior to being surveyed, and 51% reported at least one moderate or severe symptom (46).

Pain in CRC and AC

Like many cancers, CRC often causes significant pain; the prevalence of pain and the severity depends on the location and extent of the disease (47). Pain related to procedures, surgeries, and treatment complication is also common (48). Jiang *et al.* reported the prevalence of pain 42.5% in his retrospective review of common symptoms in CRC (47). Recent prescribing trends indicate that oncologists are prescribing less opioids and more non opioid alternatives (49). The opioid epidemic has spurred a plethora of new regulations around opioids that have heightened provider anxiety (50). Patients tend to experience more persistent pain as well as more frequent pain crises as the cancer advances and often require increasing doses of opioids to manage worsening pain (51). Chronic use of opioids can lead to problematic side effects, including constipation, allodynia, hyperalgesia, myoclonus, respiratory depression, confusion, and sedation (52). Moreover, opioids are not always effective in optimizing pain for patients with a visceral cancer like CRC (45).

Neuropathic pain

Neuropathic pain may occur in rectal cancers when there is invasion of the inferior hypogastric plexus. Neurolytic blocks can be an effective modality to treat this particular type of pain (53). Methadone may be used in situations such as this with improved efficacy over other opioids (54). Other adjuvant medications for neuropathic pain may also be indicated to manage visceral pain from CRC (48). PC providers are adept at monitoring higher doses of opioids, initiating and titrating methadone when indicated, leveraging adjuvant therapies for pain control, balancing opioid use with need for laxatives, and familiar with various options available for refractory pain, including expeditious referral for interventional pain procedures (55,56). These interventional procedures can allow for improved pain control while minimizing systemic side effects thereby dramatically improve functionality and QOL (57).

Treatment related pain

The combined chemoradiation that most patients with anal and rectal cancer receive results in significant pain, and the use of opioids is often necessary (48). Chemotherapy-related acute and chronic pain syndromes are common, including neuropathy related to oxaliplatin and bone pain related to

pegfilgrastim (58). Pain related to pegfilgrastim-like agents is managed with nonsteroidal anti-inflammatory drugs (NSAIDs) and antihistamines (59,60). In general, patients with increased pain during chemotherapy and radiation are at higher risk of becoming dependent on opioids, especially if they had a previous history of drug abuse; a mindful approach to managing pain is important to prevent relapse or exacerbation of using substances for coping while still providing highly effective pain management (61,62). Incident pain with defecation occurs frequently in patients with AC and PC teams can provide essential guidance in managing this type of pain (63).

Pain due to liver metastases

CRC tends to metastasize to the liver possibly leading to liver dysfunction (64). Management of pain in that setting requires a thorough understanding of the pharmacokinetics, side effects, and drug interaction of analgesics (48). In general, patient with mild liver dysfunction can be treated with regular doses of opioids. Side effects, toxicities and tolerance might increase as the liver function worsens, and analgesic modifications are frequently necessary (65).

Liver capsular pain

This pain is typically sharp and located in the right upper quadrant. Patients with liver capsular pain typically respond to NSAIDs and corticosteroids (66). Invasion of the porta hepatis, which results in referred pain from the liver to the shoulder via the phrenic nerve, is common and often minimized by clinicians or misdiagnosed (67). The latter can be managed by liver resection, NSAIDs and corticosteroids (66).

Constipation and obstipation

Constipation is a common symptom that plagues many patients with cancer but can be particularly problematic in patients with colorectal and ACs given the anatomical location of the tumor as well as the different treatment modalities used, including surgery and locoregional therapy (68). As a presenting symptom, constipation is non-specific with reported positive predictive values between 0.7% and 1.9% (69). Constipation is usually multifactorial due to the effects of opioids that are used to manage the pain associated with disease, chemotherapy, anti-emetic medications, surgical care, poor oral intake, and tumor location (70). Harada *et al.* described an incidence of opioid induced constipation as 46% in his observational study of patients

diagnosed with GI cancers (71). In a series published by Verkuyl *et al.*, the prevalence of incomplete evacuation and difficulty evacuating following hemicolectomy was 33.4% and 31.4% respectively (72). The management of constipation and obstipation, which occurs when poorly controlled constipation makes defecation nearly impossible, can be challenging. Aggressively managing constipation during cancer treatment and throughout the course of the disease helps maintain a better QOL (73). While each individual patient needs a different medication regimen, an appropriate starting place for patients prone to constipation or on medications that are constipating is an oral bulk forming agent and or sennoside laxative (74,75). For refractory opioid induced constipation, consider use of methylaltrexone, naloxegol or lubiprostone. Enemas and suppositories should be reserved for patients with a preserved rectum that is filled with stool (74). Using an aggressive bowel medication regimen can prevent the numerous problems associated with constipation and patients should be counseled on what would work best for them. Refer to *Table 1* for commonly indicated medications to treat constipation (75).

Ostomy

Many patients with colon cancer have surgery as part of their treatment plan. Patients with both CRC and AC may end up with a diverting ostomy in situations when presenting present with advanced obstructing disease (76). Typically less than 10% will end up with a permanent ostomy (77). For early-stage CRC, minimally invasive procedures such as endoscopic treatment may be appropriate, but for patients with advanced cancer, surgical intervention may be the only option for potential cure (78). Depending on the size, location, and other factors specific to an individual's tumor, post-operative patients may have an ostomy (79). For some patients, an ostomy is a small inconvenience and lifestyle adjustment; for others, it is completely life-altering and can be devastating (80). One of the ways that PC providers can help patients with an ostomy is to set expectations pre-operatively about the implications of an ostomy's effect on day-to-day life (81). After surgery, many patients adjust over time to having the contraption, but others need significant support to move forward with living with an ostomy (82).

Nausea and vomiting

Patients with CRC and AC may present with nausea and

Table 1 Common medications to manage constipation

Pharmacologic category	Examples of medications with route of administration	Special considerations
Bulk forming laxatives	Methylcellulose	First line agent to treat and prevent constipation
Stimulant laxative	Bisacodyl (PO/PR); glycerol (PR/PR); senna (PO)	Senna can be added to treat and prevent constipation. Glycerol and bisacodyl (suppositories or enemas) should be given when there is stool in the rectum
Osmotic	Lactulose (PO); magnesium hydroxide (PO); sodium acid phosphate with sodium phosphate (PO, PR)	Typically used to treat acute exacerbation of constipation
Softening laxatives	Docusate sodium (PO)	Less effective. Do not use as first line
Peripheral opioid receptor antagonist	Methylnaltrexone (SQ); naloxegol (PO)	For refractory opioid induced constipation. Can be cost prohibitive
Chloride channel agonist	Lubiprostone (PO)	For refractory opioid induced constipation. Can be cost prohibitive

PO, oral; PR, per rectum; SQ, subcutaneous.

vomiting (83). Walling reported that 32.4% of patients with early stage disease and 47.2% with late stage reported nausea and or vomiting (46). Like pain and constipation, the causes of nausea and vomiting are vast, and include direct tumor effect, chemotherapy, radiation, pain medications, changes in appetite and oral intake, anxiety, and anorexia (84-87). There are many anti-emetic options that can be used in patients undergoing CRC or AC treatment, and the decision-making process should be guided by the underlying etiology of an individual's nausea (85). Patients undergoing chemotherapy with a high potential for nausea and or vomiting should be given a 5-HT₃ receptor antagonist (88). The choice of medication can be selected based on half-life and cost; NK1 receptor antagonists are also considered first line to treat chemotherapy induced nausea and vomiting (CINV), but should be prescribed with a 5-HT₃ antagonist (89). Olanzapine, a dopamine antagonist is increasingly being used to treat CINV (90). Although the mechanism of action for corticosteroids is unclear, it can be effective in the treatment of CINV (88,90). Finally, anticipatory nausea often responds to histaminergic medications, and can be given prior to treatment (88). Please see *Table 2* for commonly used medications to treat both anticipatory and treatment related nausea and vomiting (91).

Anorexia

Patients with cancer routinely notice a significant impact on their appetite and ability to eat normally during treatment

and with disease progression, and this is magnified in patients with cancers of the GI tract (92). Molfino *et al.* reported a prevalence of anorexia between 39.9% and 65.5% (93). Certain medications, such as mirtazapine, dronabinol and megestrol, can be considered, but have limited data supporting efficacy (94,95). Corticosteroids are usually effective in the short-term, but do not provide lasting effects. It is important to consider both dietary modifications and pharmacologic interventions in managing anorexia (96).

Malignant bowel obstruction

Bowel obstruction is common in GI malignancies. Rates of malignant bowel obstruction have been documented to be as high as 25% to 40% in patients diagnosed with CRC (97). Obstruction can develop from a benign etiology (adhesion, scarring, etc.) and can be managed conservatively, however the majority of bowel obstructions in patients with cancer are malignant and require surgical intervention (98-102). The management of malignant bowel obstruction is beyond the scope of this article, but the role of PC in this setting is crucial, especially if the obstruction happens late in the disease course when limited effective cancer treatments are possible and or if patients lack the insight into what this complication may mean for their prognosis in general (103-109).

Psychological and spiritual distress

The focus of care when a patient is diagnosed with a cancer

Table 2 Treatment of CINV and ANV

Medication class	Drug examples	Adverse effects	Contraindications
5-HT ₃ receptor antagonists (first line CINV)	Ondansetron; dolasetron; granisetron; palonosetron	• Headaches and constipation	• Prolonged QT syndrome
NK1 receptor antagonists (first line CINV) [†]	Aprepitant; fosaprepitant; rolapitant	• Diarrhea, fatigue, and nausea • Rolapitant can additionally cause neutropenia, hiccups, and dizziness	• Avoid in patients on pimozide • May increase corticosteroid levels • Can decrease effects of warfarin • May interact with CYP3A4 substrates, CYP3A4 inhibitors, and CYP3A4 inducers
Corticosteroids	Dexamethasone	• Increased appetite	• Long-term side effects include muscle weakness, osteoporosis
Dopaminergic antagonists (D2)	Promethazine; metoclopramide; prochlorperazine; olanzapine	• Extra-pyramidal symptoms • Olanzapine can also cause sedation, fatigue, headache, dry mouth, hyperglycemia, and diarrhea	• Patients with prolonged QT
Histaminergic (H1) (first line for ANV)	Lorazepam	• Sedation	• Caution in patients with delirium
Dronabinol	Cannabinoid	• Confusion	–

[†], must be used in combination with 5-HT₃ antagonists. CINV, chemotherapy-induced nausea and vomiting; ANV, anticipatory nausea and vomiting; CYP3A4, cytochrome P450 3A4.

such CRC is primarily the treatment plan, including details of the surgery, radiation or chemotherapy, the medications for symptomatic management and the next steps (110). As a result, the psychological impact of the diagnosis on the patient and family may be inadvertently overlooked while trying to ensure that the medically essential details are finalized (108). “*Patients [and families] are left to cope on their own with the reality of a new cancer diagnosis and the physical, spiritual and psychological distress that comes along with it*” (92,111). The prevalence of psychosocial distress was 20% in a cross-sectional study of 200 CRC survivors in a study published by Andreu (112). Calderón *et al.* explored the relationship between coping strategies and psychological status with level of functioning in patients with GI and CRCs. Patients with CRC had relatively less psychological distress than patients with gastric cancer (20% vs. 5%), but both groups had considerable distress that could “*benefit from targeted interventions to improve adaptive coping strategies before initiating adjuvant cancer therapy*” (110). One modality to support patients’ psychological distress is to routinely consult specialty PC. PC teams are interdisciplinary and frequently include social workers and chaplains who assess and support patients experiencing symptoms from these

domains (37,113). PC providers explore what motivates a person, what their goals and values are, and how the illness has influenced them; digging deeper into the aspects that make an individual person themselves is one of the most important ways of humanizing and personalizing care (114). Making patients feel valued and seen and witnessing their psychological and spiritual distress lessens it, thereby having a positively impact on the patient and family’s experience of the illness, mitigating distress and enhancing QOL (115).

Embarrassment and shame can unfortunately impact patients diagnosed with CRC. Although there is little published data on the frequency of embarrassment and or shame in patients diagnosed with CRC, Leal described the psychosocial experiences in his qualitative study (116). Patients may feel uncomfortable reporting symptoms related to bowel habits even to their health care providers (117). Given the nature of AC, symptom burden can be related to bowel movements and other uncomfortable topics including sexual dysfunction (118,119). AC is particularly difficult for many people to discuss openly. After actress and activist Marcia Cross completed treatment for AC, she made the decision to speak openly about her disease and treatment. “*I wasn’t*

interested in becoming the AC spokesperson. I wanted to move on with my career and my life, but, as I was going through it, I read repeatedly about people who were ashamed, who were hiding, who were lying about their diagnosis. And on the other side, how doctors were not comfortable talking about it. And women were not given the follow up care they needed. They weren't told things like your vagina could develop scar tissue, which it does. I just saw how, oh my gosh, we are so behind on all of this because it's our anuses! For whatever reason, I don't have any shame about that. I'm a big fan of the anus ... I just have a lot of respect for this tiny, little two inches that makes our lives livable and pleasant. I really think to destigmatize it is the way to go. It's just silly ... We all have one. It's nothing to be embarrassed or ashamed of" (120). While her candor has been important and brave, much work still is needed to destigmatize AC and help patients suffering from this highly symptomatic illness not have shame or embarrassment (121,122). Oncologists and PC providers should partner to provide wholistic care for patients diagnosed with CRC and AC to ensure that all patient needs are assessed and addressed (123).

Communication

Clear communication is crucial to ensure patients with CRC and AC understand the diagnosis, treatment options, burdens, and benefits of treatment, prognosis presented to them and ACP. Patients who have completed advance care directives and communicated their wishes on EOL care tend to have less anxiety and depression, and surrogates feel more prepared to face whatever future occurs (124). For numerous reasons, oncologists may avoid serious illness conversations with patients, often waiting until the end of life to initiate these conversations, particularly with younger patients such as those diagnosed with CRC (125). Some of the barriers on the part of physicians to discussing EOL preferences and care planning include lack of time, lack of knowledge of how to address these emotionally taxing and value-laden subjects, fear of stirring up strong emotions in patients and families and uncertainty in prognosis (126). Patients may have unrealistic hopes related to their diagnosis and prognosis, and these unrealistic expectations are magnified if the physician does not address these subjects in an appropriate and timely manner (127).

As a result of novel therapies such as immunotherapy and targeted therapies, as well as earlier diagnosis due to improved screening, patients with CRC tend to live longer than a decade ago (128). Brooks *et al.* noted in his retrospective analysis that this longer survival time was

associated with an “increased intensity of medical care”, including greater use of chemotherapy and acute hospital care (129). Avoiding intensive interventions at end of life is a priority for many patients, and having a PC provider on the team from the start allows patients to have fuller and more nuanced conversations along the disease trajectory to better prepare the patient and their surrogates for what can be anticipated in the future as well as how to respond and act when unanticipated events occur, as they so often do in patients with advanced cancer (113). As discussed, small bowel obstruction (SBO) is a common complication seen at the EOL in patients with CRC, and is associated with significant physical, spiritual, and psychosocial distress (130). Although this complication is a well-established harbinger for the end of life, patients rarely understand the prognostic implications (105). Having PC providers on the care team offers an additional perspective on the course of illness and what events, such as SBO, may mean about the prognosis.

Intentionally engaging patients and families in goals of care discussions and wishes on EOL care has been shown to improve pain and spiritual assessments, reduce 30-day readmission rates and increase hospice referrals, all of which are important quality indicators that are measured in cancer care (37). Integration of specialty PC into patients diagnosed with CRC should be included as an important modality to improve communication to both patients and families as it relates to patients understanding of diagnosis, prognosis and treatment plans (131).

ACP constitutes a series of conversations and linking inpatient and outpatient PC facilitates the ongoing discussions among patients, families and care teams as the patient's course becomes evident. ACP and SIC help patients communicate their wishes on EOL care to both their families and also health care providers (132). ACP can have many benefits including improved patient-centered care and decreased health care costs (133-135). ACP encompasses discussions about surrogate decision makers, hospice enrollment, limitations on care, anticipatory guidance around expectations of illness, prognostic discussions, and EOL planning. ACP is not a single event, but rather a process and can and should occur repeatedly throughout the illness trajectory as new situations arise and patients' wishes and priorities evolve. Integral to ACP is identifying a surrogate decision maker and ensuring that individual is prepared to assume that role by including that person in discussions with the patient about what their goals and values are for future care (136).

There exist multiple barriers to complete ACP at the

individual patient, physician, and institutional level (137). Historically, clinicians tend to engage cancer patients in ACP conversations at the EOL (138). Mack *et al.* noted that 55% of initial EOL conversations occurred in the intensive care unit with a median time of 33 days before death (139). Studies have shown that despite the use of novel modalities to facilitate ACP in the clinic, documentation of directives remains elusive. Aslakson *et al.* described a video-based intervention to facilitate ACP for patients seen in the preoperative setting. Although the videos were found to be “helpful”, they did not result in increased “advance care planning content or communication” with the surgical oncologists (140). This study indicates that there is no “one size fits all” approach that effectively leads to ACP conversations and advanced directive completion. PC specialists use their communication skills to effectively elicit patients’ wishes and help promote goal-concordant care in the CRC population. This is another reason that early PC for cancer patients with CRC is encouraged (10).

Conclusions

National trends show that CRC diagnoses have increased over time, particularly in younger patients. AC, though rare, is also a disease that is common among young immunocompromised patients. With the advent of novel therapeutics, patients are surviving longer which has resulted in an increased burden of symptoms of all types, including psychological, spiritual, and physical symptoms. Each of these diseases has a unique set of symptoms that require intensive management to ensure that patients are able to live well with their serious illness. PC teams should be an integral part of their routine care to help maximize their QOL and support patients throughout their disease trajectory.

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