Geriatric oncology: assessing the needs of older people with cancer

ABSTRACT

A majority of cancer cases now occur among older people, but this group is less likely to receive treatment and outcomes are poorer than in younger people. Age by itself can be a poor predictor of who will benefit from treatment with surgery, chemotherapy or radiotherapy. Comprehensive geriatric assessment is a multidisciplinary, multidomain process that helps to identify frailty, which is associated with increased mortality. Comprehensive geriatric assessment highlights areas that should be optimized before treatment and helps support a shared decision-making approach. Geriatricians, oncologists and surgeons now work together to help assess and support older people with cancer.

Cancer has now become a disease primarily of older people, with a majority of cancer diagnoses and deaths occurring in people over 65 years of age (Office for National Statistics, 2017). Older people are more likely to be diagnosed as an emergency, at a later stage and have poorer outcomes (National Cancer Intelligence Network, 2015). Although overall cancer survival rates are improving, the rate has been slower in older people leading to a widening gap in outcomes between young and old (Quaglia et al, 2009). Older people with cancer tend not just to have cancer, but also other competing comorbidities (Williams et al, 2016).

There is increasing recognition of the need to improve care for older people among oncologists, with the American Society of Clinical Oncologists releasing guidelines on the use of geriatric assessment (Mohile et al, 2018). Providing a standardized comprehensive geriatric assessment helps with shared decision making when considering different management options. It also provides an assessment of needs so that appropriate support can be given to people undergoing treatment.

Assessing older people with cancer

Comprehensive geriatric assessment involves a multidisciplinary, multidomain assessment so that a full picture of an individual's health status can be gained. This is important, as chronological age itself is a poor predictor of the physiological and functional status of patients (Hurria et al, 2008). Comprehensive geriatric assessment increased the likelihood of being alive and at home after 12 months of follow up in older people who were admitted as an emergency to hospital (Ellis et al, 2017). In a study of comprehensive geriatric assessment in cancer, the assessment identified new issues over 50% of the time, and in 25% of patients their cancer treatment decision was influenced (Kenis et al, 2013).

Comprehensive geriatric assessment does not produce a single outcome score, but rather a descriptive analysis of the patient's health across multiple domains. This process facilitates identification of frailty: 'a condition or syndrome which results from a multi-system reduction in reserve capacity to the extent that a number of physiological systems are close to, or past, the threshold of symptomatic clinical failure' (Campbell and Buchner, 1997). The result of frailty is an increased risk of disability and death from stresses that may be relatively minor. There is evidence that frailty is a predictor of mortality, morbidity and length of stay after surgery (Partridge et al, 2012), and geriatric conditions are associated with chemotoxicity (Hamaker et al, 2014). Cancer itself is associated with a higher frailty index (Pérez-Zepeda et al, 2016) and an abnormal result in any of the comprehensive geriatric assessment domains is associated with a higher risk of death (Frasca et al, 2018). As a result of these findings, comprehensive geriatric assessment should be performed in older people with cancer to identify those who may benefit from enhanced support.

Components of comprehensive geriatric assessment

Figure 1 outlines the main components of a comprehensive geriatric assessment and these are discussed in more detail below.

Comorbidity

The number of medical conditions rises with age, but a patient may have several comorbidities that have a relatively mild effect, or conversely could have a single one that causes severe impairment. Comorbidity is an important influence on overall survival in patients with cancer (Edwards et al, 2014). Some other conditions (e.g. dementia, heart failure) may have a more significant impact on prognosis than the patient's cancer, and comprehensive geriatric assessment helps to prioritize management aims.

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Functional status

Functional status assesses a patient's ability to perform his/her activities of daily living. Impairment is more common in older people who have cancer than those who do not (Stafford and Cyr, 1997). Overall survival in patients with advanced non-small cell lung cancer receiving chemotherapy is associated with level of independence (Maione et al, 2005). The risk of treatment toxicity is also higher in those who are more functionally impaired. Slow gait speed is associated with early death within the 6-month follow-up period after a comprehensive geriatric assessment, independent of cancer site and cancer extension (Pamoukdjian et al, 2015).

Cognitive status

During a brief clinic visit it can be difficult to detect any cognitive problems. If cognitive impairment is present it is important to distinguish between acute delirium and dementia as this will influence management plans. Delirium needs urgent assessment and treatment but may improve quickly. Dementia may have an impact on treatment options, overall survival and care needs. Mental capacity needs to be checked in all patients before treatment so that informed consent is obtained, and even those with cognitive impairment may retain capacity to decide about treatment options.

Nutritional status

Malnutrition identified on the Mini Nutritional Assessment is an independent predictor of non-haematological toxicity among older people receiving chemotherapy (Extermann et al, 2012). Weight loss has long been recognized as an independent prognostic factor for survival in people with cancer (Dewys et al, 1980). It can be easily measured and monitored throughout treatment.

Mood

Low mood can have a negative impact on functional independence and on mortality. Depression is common, occurring in up to 25% of older people with cancer (Kua, 2005). Although anxiety decreases with age in older people with cancer, depression has been shown to remain constant (Weiss Wiesel et al, 2015). It is associated with lack of social support, increased number of comorbidities, and advanced stage. The psychological demands of cancer can mean that older people with the condition are particularly vulnerable – extra support should be offered where needed.

Medication review

Potentially inappropriate prescribing is common in patients being actively treated with chemotherapy and interactions can be very harmful (Maggiore et al, 2014). In patients whose life expectancy is limited, the benefit of medications such as statins, osteoporosis treatment or antihypertensives will be much less. The Beers criteria (American Geriatrics Society 2015 Beers Criteria Update Expert Panel, 2015) or Screening Tool of Older Person's Prescriptions (STOPP) (O'Mahony et al, 2014) can be helpful.

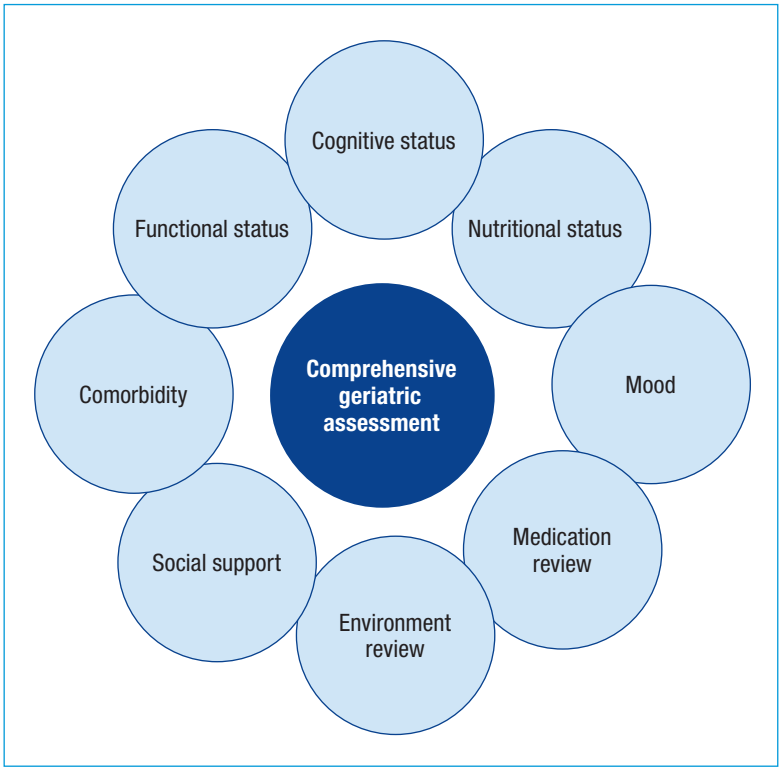

Figure 1. Components of a comprehensive geriatric assessment.

Environment review

As age advances, environmental needs may change. Occupational therapists can perform functional assessments or a home visit to help assess hazards that increase falls risk, as well as planning for aids or equipment that may be necessary as functional impairment increases.

Social support

Cancer or its treatment can result in increased functional impairment, and thus increasing need for social supports. Regular reassessment is important if changes occur. In a study of older women with breast cancer, social isolation was associated with an elevated risk of mortality (Kroenke et al, 2006).

Who performs comprehensive geriatric assessment?

Comprehensive geriatric assessment is most usefully performed as a multidisciplinary assessment. This usually involves a geriatrician, physiotherapist, occupational therapist, specialist nurse and sometimes others such as a pharmacist, speech and language therapist or social worker. The process can be time-consuming and can require up to 2 hours to complete. Because of this, screening tools have been created, such as the G8, in an attempt to help decide who should go on to have full comprehensive geriatric assessment (Soubeyran et al, 2014). However, none has

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been shown to predict the outcome of comprehensive geriatric assessment and so it remains the gold standard (Yokom et al, 2018). The argument that comprehensive geriatric assessment is too difficult should be balanced against the cost of cancer treatment and even investigations to stage the cancer (Hamaker et al, 2017).

As well as the hospital-based assessment, GPs have a lot to offer to the process of comprehensive geriatric assessment. As they often know their patients extremely well they can give a nuanced opinion on how interventions may affect the patient's quality of life. Despite being heavily involved in the care of their older patients living with cancer, GPs report feeling isolated in their role at each step during the course of the disease (Chicoulaa et al, 2016). It is essential that they are kept well informed at all stages of their patient's management.

Using comprehensive geriatric assessment to guide care

Older people are less likely to be offered intensive cancer therapies than younger people (Foster et al, 2010). Rather than using age alone to guide management, the results of the comprehensive geriatric assessment should be considered along with other factors such as tumour type, stage, prognosis and the likely risks and benefits of all options. This facilitates a realistic discussion with patients, families and caregivers that should help to prioritize the goals for treatment. Once these have been set, the favoured treatment option can be decided on, but regular review may be necessary as these factors may change depending on the course of the illness and its treatment.

The patient's preferences should be central to the process. It is important to recognize that increased survival may not be the primary goal for some older patients who may prioritize maintenance of independence, quality of life or preservation of cognitive function. This type of shared decision-making approach is facilitated by comprehensive geriatric assessment as part of a multidisciplinary cancer team that should also include specialists in palliative medicine.

Comprehensive geriatric assessment can help to identify patients who are likely to be fit enough for intensive therapy, but also to recognize those who may benefit from a modified treatment plan. A core principle of geriatric medicine is that many older patients can improve with optimization, and this may mean that treatment may need to be delayed. The concept of prehabilitation is currently being addressed by research studies so that the evidence base can be clarified.

In a systematic review of comprehensive geriatric assessment in older people with cancer, for the majority of patients their treatment was adjusted to a less intensive option (Hamaker et al, 2018). Effect on treatment outcome varied, with a trend towards a positive effect on treatment completion (positive effect in 75% of studies) and treatment-related toxicity and complications (55% of studies). One study of patients with non-small cell lung cancer failed to show an overall survival benefit by stratifying patients using geriatric assessment rather than by age and performance status (Corre et al, 2016). However, it is important to note that approximately a quarter of patients in the geriatric assessment group were spared chemotherapy, fewer patients discontinued treatment, and toxicity was reduced. Other factors which may account for the lack of impact include the chemotherapy regimen suggested for frailer patients and the fact that the intervention was a trial of geriatric assessment by oncologists rather than a true comprehensive geriatric assessment.

Surgery

Surgery is common in the older population, and its use is likely to increase further as the population continues to age (Etzioni et al, 2003). After an individual assessment, all appropriate treatment options should be considered, as the consequences of not having surgical resection are serious. In one review, 30-day mortality in patients over 85 years of age who had colorectal cancer was independently related to having no resection performed, with an odds ratio of 10 (Sheridan et al, 2014).

Older people often tolerate surgery well and there are several examples of cases where outcomes are comparable to those of younger people. In a study of 472 older patients who underwent major gastrointestinal cancer resections, mortality rates were not significantly higher in the over 65-year or the over 70-year age groups when compared to younger controls (Batra et al, 2016). Rather, it is frailty that is associated with a higher risk of postoperative complications, longer hospital stays, increased readmission and decreased long-term survival rates (Fagard et al, 2016). Introduction of a frailty screening initiative was associated with reduced postoperative mortality in older people undergoing elective surgery (Hall et al, 2017). With interesting parallels to centralisation of cancer surgery, it has also been found that performing elective surgery on frail older people in centres that have a higher volume of frail patients is associated with superior outcomes (McIsaac et al, 2017).

Chemotherapy

Unfortunately, older people and those with comorbidities are under-represented in cancer clinical trials (Scher and Hurria, 2012). Because of this, there is still a lack of evidence to show efficacy for some therapies, especially in the adjuvant setting, where patients receive additional treatment to reduce the risk of recurrence after curative treatment. There is also little evidence to guide the usage

of reduced dose chemotherapy. A pragmatic approach is therefore often needed, i.e. using 'start low, go slow' as a guiding principle.

There are concerns that older people will not tolerate cancer treatment, but in fact many do. In a study of older patients with small cell lung cancer, of those who were recommended chemotherapy by their oncologist, 81% began treatment; 52% of those treated completed all planned cycles, with 34% of the treatment group receiving reduced doses (Fisher et al, 2012). Patients who completed chemotherapy had significantly better survival than those who did not, even when the dose was reduced. Chemotherapy risk prediction tools have now been developed (such as the CRASH score (Extermann et al, 2012), or CARG tool (Hurria et al, 2016)) that have been validated in this group. These can help to better inform provider and patient of the balance of risk and benefit. It is also important to consider that chemotherapy side effects, for example peripheral neuropathy caused by paclitaxel or proximal myopathy caused by high dose steroids, may have a greater impact on older patients and even lead to a loss of independence.

Impairments in the comprehensive geriatric assessment are associated with chemotherapy-related toxicity and shorter overall survival, showing the value of information acquired during this assessment (Hamaker et al, 2014). Patients who receive comprehensive geriatric assessment are more likely to complete cancer treatment as planned with fewer required treatment modifications (Kalsi et al, 2015).

Novel therapies, such as immunotherapy and targeted therapies, for example, for epidermal growth factor receptor mutations, are increasingly important particularly in the treatment of melanoma and lung cancer. There is limited evidence of their use in older patients – early experience suggests that they are equally effective and generally well tolerated, although when side effects occur they can be serious.

Radiotherapy

Radiotherapy is an attractive treatment option for older adults as it is largely non-invasive. It is generally very well tolerated, even in the oldest old category and in patients who are not fit enough for chemotherapy or surgery. A study of nonagenarians showed that they exhibited good tolerance – 89% finished the treatment and had an average of 13 months of survival after radiotherapy (Thompson et al, 2012). Often, the biggest concern for older people undergoing radiotherapy is the distance to travel to the radiotherapy centre and the overall duration of their scheduled treatment, which may take some weeks to complete. There is a move towards delivering radiotherapy for common cancers such as prostate and breast over a shorter time period, which is known as hypofractionation. In some cases treatment can be modified, for example using weekly schedules. Improvements in modern radiotherapy have also reduced toxicity and improved efficacy, with stereotactic ablative body radiotherapy for early stage lung cancer rivalling surgery for local control, with few side effects (Bahig et al, 2017).

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In contrast to chemotherapy, there are no validated tools that can help to predict which older patients are at high risk of radiotherapy-related toxicity. Treatment toxicities may also overlap with common problems in older patients such as incontinence in pelvic treatments and poor nutrition in treatments to the head and neck or thorax. It is also important to note that radiotherapy is delivered as a course of treatment and early discontinuation or gaps in treatment can significantly reduce effectiveness. Therefore it is important to try and select patients carefully and support them through treatment, with more research required to assess the impact of comprehensive geriatric assessment.

Non-medical care

Despite the focus on medical care, it is important to consider what other needs older people may have, and how these can be met. Symptoms from cancer or its treatment can include fatigue, reduced mobility, impaired cognition, nausea, poor appetite and weight loss. This can cause unexpected difficulty with performing routine activities of daily living. Independence can be adversely affected, and care needs can be significantly increased. Interventions such as mobility aids, a raised toilet seat, a commode, grip handles or modifications to the home such as a walk-in shower, downstairs living or a stair-lift may help to support independence. Other considerations include a package of social care, financial support, organizing transport to hospital appointments or ensuring that social isolation is reduced by providing a referral to volunteer support groups. In the systematic review by Hamaker et al (2018), non-medical interventions were recommended in a median of 72% of patients, most commonly involving social issues (39%).

Clinical trials to inform practice

A significant problem for evidence-based oncology care is that older adults are under-represented in oncology clinical trials. Selection of more appropriate endpoints is important in 'geriatricizing' trial design, such as those determined by comprehensive geriatric assessment (Wildiers et al, 2013). This has been highlighted by Nipp et al (2016) who described the need for 'pragmatic' clinical trials for older adults with cancer. Whereas randomized controlled trials reflect patient outcomes under ideal conditions, there is a large unmet need to investigate older patient outcomes under more realistic conditions, i.e. varying degrees of fitness and frailty. Inclusion criteria need to be broader to facilitate this. Innovative studies can be performed,

KEY POINTS

- The majority of cancers now occur in older people.
- Frailty, rather than age alone, should be used to guide shared decision making.
- Comprehensive geriatric assessment helps to identify unmet care needs.
- Comprehensive geriatric assessment also helps to determine who is likely to benefit from treatment.
- Non-medical needs are also important to address.
- Older people are under-represented in cancer research and more pragmatic trial types are needed.

such as the FOCUS2 study, which used reduced dose chemotherapy in frail patients with colorectal cancer and developed novel endpoints such as 'treatment utility', which included both a treatment benefit as well as a lack of toxicity (Seymour et al, 2011). However, trials such as this remain rare and evidence for the majority of treatments is extrapolated from a young fit population, with the risk of increased toxicity and reduced effectiveness in a real world setting.

Conclusions

Cancer is common in older people and the outcomes are poorer than in the younger group. Comprehensive geriatric assessment is recommended to identify frail patients who will benefit from enhanced support. All treatment options should be considered, and a shared decision-making framework used to help decide optimal management strategies. Non-medical care needs such as social support and environmental modification should also be assessed. Owing to under-recruitment of older people to studies of cancer treatment, there is a need for further evidence to guide care in this group. **BJHM**

Conflict of interest: none.

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