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Editorial Comment

Oncological causes of frailty in older cancer patients

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ARTICLE INFO

Article history:
Received 15 February 2007
Accepted 21 February 2007
Available online 16 April 2007

One of the major advantages of the Multidimensional Geriatric Assessment (MGA) is that of allowing to distinguish among fit patients to be treated as adults, frail patients to be handled with palliation or patients in an intermediate state or vulnerable.[1]

Frail patients are those with dependence in one or more of Activities of Daily Living-ADL,[2] three comorbidities grade 3 or one comorbidity grade 4 according to the Cumulative Illness Rating Scale for Geriatrics CIRS-G,[3] one or more geriatric syndromes (dementia, delirium, depression, failure to thrive, neglect or abuse, severe osteoporosis, falls, incontinence).[1] CIRS-G grade 3 identifies a severe/constant significant disability/'uncontrollable' chronic problem while grade 4 is an extremely severe problem/organ failure.[3]

It is rather easy to define a patient as frail if one considers only non-tumour associated comorbidities, but the clinical observation within our Program of Geriatric Oncology[4] that many old patients are rendered frail by their neoplastic disease but deserve an active and not palliative treatment, led us to the following proposal for the definition of frailty attributable to the tumour and its complications (Table 1).

We think that all neoplasias in an advanced phase which can be treated but not cured by chemotherapy and/or endocrine agents should be registered as neoplastic comorbidity grade 3 because they are intrinsically an 'uncontrolled chronic problem', different from patients treated adjuvantly or those achieving durable complete remission. The advanced tumour itself therefore becomes a grade 3 comorbidity which should be added to the count of other grade 3 concomitant diseases leading to the definition of frailty.

Conversely, when disseminated cancer causes severe liver or renal failure, pulmonary insufficiency, or depressed level of consciousness, these complications can be considered as 'tumour-dependent' grade 4 comorbidities. The term severe may appear rather subjective, but the latest version of Common Terminology Criteria of Adverse Events-CTCAE[5] may well be applied to score intensity of organ failure according to grade 4 level of clinical parameters such as liver transaminases, creatinine clearance, O_2 saturation, etc.

Other neoplastic complications of cancer such as pathological fractures, uncontrollable pain or muscular atrophy may compromise ADL dependence and be cause of frailty, while urinary and rectal incontinence due to tumour infiltration/demolitive surgery as well as cachexia could fall within the geriatric syndromes.

The peculiarity of frailty due to tumour-associated ADL dependence is that it may be reversible after therapy if the response of the tumour translates in the recovery of functional autonomy, while grade 4 complications due to extensive organ involvement have usually very limited chances of improvement with systemic treatments.

The above categorisation of oncological causes of frailty could also be used to better describe the condition of younger adults with advanced neoplasia instead of the generic definition of 'patients with low performance status'.

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0959-8049/$ - see front matter
doi:10.1016/j.ejca.2007.02.004

Table 1 – Definition of frailty from oncological causes

- Severe[a] tumour-related organ failure (comorbidity grade 4 according to CIRS-G)
- Grade 3 neoplastic comorbidity[b] plus two or more grade 3 comorbidities of other systems
- Functional impairment (ADL < 6) due to neoplastic disease
- Tumour-related geriatric syndromes (urinary or rectal incontinence due to tumour infiltration or surgical sequelae, failure to thrive due to neoplastic cachexia, etc.)

In case of chemosensitive or endocrine-responsive tumour, frailty might be reversible if ADL-dependence or severe tumour-related complications improve after therapy.

a CTC criteria may be applied to identify grade 4 compromising of organ function.
b Defined as any advanced tumour amenable to receive chemotherapy or endocrine agents, but not curable.

In conclusion, the definition of frailty is essential to take a therapeutic decision in older cancer patients, but a clinical definition referring to 'frailty from oncological causes' is lacking, therefore we propose an operational definition (Table 1) and call for comments and criticism on this issue.

Conflict of interest statement

None declared.

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