



Baseline cognitive functions among elderly patients with localised breast cancer^{☆,☆☆}



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☆ Data in this paper were presented in part as an oral communication at the ASCO Annual Meeting (Chicago, 31st May 2013–4th June 2013), as a poster at the meeting of the Federation of the European Societies of Neuropsychology (Berlin, 12–14th September 2013), and as a poster at the conference of International Cognition and Cancer Taskforce (Seattle, 10–12th February 2014).

☆☆ The registration identification number of this clinical trial is NCT01333735.

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Received 17 February 2014; received in revised form 22 April 2014; accepted 29 May 2014
Available online 20 June 2014

KEYWORDS

Cognition disorders
Breast neoplasms
Ageing
Neuropsychology
Quality of life

Abstract Purpose: Cognitive deficits (CD) are reported among cancer patients receiving chemotherapy, but may also be observed before treatment. Though elderly patients are expected to be more prone to present age-related CD, poor information is available regarding the impact of cancer and chemotherapy on this population. This study assessed baseline cognitive functions (before adjuvant treatment) in elderly early stage breast cancer (EBC) patients.

Methods: Women >65 years-old with newly diagnosed EBC were included in this prospective study. Episodic memory, working memory, executive functions and information processing speed were assessed by neuropsychological tests. Questionnaires were used to assess subjective CD, anxiety, depression, fatigue, quality of life and geriatric profile. Objective CD were defined using International Cognition and Cancer Task Force criteria. A group of elderly women without cancer coupled with published data related to healthy women were used for comparison (respectively to subjective and objective CD).

Results: Among the 123 elderly EBC patients (70 ± 4 years) included, 41% presented objective CD, which is greater than expected in healthy population norms (binomial test $P < .0001$). Verbal episodic memory was mainly impaired (21% of patients). No correlation was observed between objective CD and cancer stage or geriatric assessment. Subjective CD only correlated with verbal episodic memory ($P = .01$).

Conclusions: This is the first large series assessing baseline cognitive functions in elderly EBC patients. More than 40% presented objective CD before any adjuvant therapy, which is higher than what is reported among younger patients. Our results reinforce the hypothesis that age is a risk factor for CD in EBC patients.

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1. Introduction

Beyond difficulties with memory, attention and concentration reported by cancer patients, it has become increasingly apparent that cytotoxic drugs given for non-central nervous system tumours might induce cognitive side-effects. This phenomenon – called ‘chemobrain’ – has been particularly studied among young women treated with chemotherapy for breast cancer. According to the literature, these cognitive troubles could affect 15–50% of chemotherapy-treated patients and are usually moderate in severity [1]. Nevertheless, recent longitudinal studies revealed that about 20–30% of breast cancer patients have cognitive impairment before starting adjuvant treatment [2]. This indicates that beside exposure to cytotoxic drugs, other factors including postoperative dysfunctions, psychological distress related with the diagnosis, fatigue, genetic factors and also the biological adverse effects of cancer itself are involved, suggesting an impact of cancer as a whole on cognitive functions [3,4].

The mean patients’ age in the previous studies addressing the impact of cancer on cognitive function was less than 65 years. Yet, because cancer increasingly appears among seniors, the impact of ageing on cognitive impairment is a relevant issue. Ageing by itself is known to be associated with some cognitive

modifications, comorbidities and functional decline, which may all have an impact on the patients’ independence. While both ageing and cancer are expected to have an impact on cognition, biologic processes underlying cancer led to the hypothesis that age-associated declines among cancer patients would not just be parallel to but higher than those of older adults with no cancer history, and that treatment-induced accelerated ageing would be observed only in vulnerable or frail populations [2]. Although a pretreatment cognitive evaluation is a prerequisite to define the part of cognitive chemotherapy-induced impairment, only one study, to our knowledge, addressed this issue especially among elderly breast cancer patients [5].

The aim of the present prospective study was to precisely assess cognitive functioning (objective performances and subjective complaints) among elderly EBC patients before starting adjuvant therapy, and to seek for correlations with mood, fatigue, quality of life and clinical variables.

2. Patients and methods

2.1. Participants

Newly diagnosed and consecutive elderly women with EBC were recruited from three French Cancer

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