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Original article

## Malnutrition in patients with breast cancer during treatments (Algeria, 2016)

*Dénutrition chez des patientes atteintes de cancer du sein en cours de traitements (Algérie, 2016)*

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### Abstract

**Objective.** – The aim of this study was to estimate the prevalence of malnutrition in Algerian patients with breast cancer during their treatments at an Anti-Cancer Center in Batna (Algeria).

**Matériel and methods.** – This was a cross-sectional, descriptive survey carried out during 7 months with patients with breast cancer during their treatments, regardless of the disease stage. The evaluation of their nutritional status was carried out according to three approaches: Nutrition Risk Index (NRI) or Buzby Index; objective assessment of nutritional status; Patients Generated-Subjective Global Assessment (PG-SGA).

**Results.** – One hundred and sixty-seven patients were included. One of two patients had a total first treatment access period ranging from five months to more than three years from the date of onset of the first symptom seen. More than four of five patients had cancer at invasive (presence of nodules) or metastatic stage. In our study, the NRI allowed to estimate to 53% the prevalence of severe or moderate malnutrition against 63.5% according to the objective method of evaluation. According to the PG-SGA score, 77.2% of the patients were at high risk of malnutrition and 97% needed interventions and/or nutritional recommendations.

**Conclusion.** – The high prevalence of malnutrition was, in part, due to the fact that patients presented to treatment at locally advanced or metastatic stages. In order of early detection of situations at risk of malnutrition, the assessment of nutritional status should be an integral part of the overall taken care of patients with breast cancer.

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**Keywords:** Breast cancer; Malnutrition; NRI; PG-SG; Algeria

### Résumé

**Objectif.** – L'objectif de cette étude était d'estimer la prévalence de la dénutrition chez des algériennes atteintes de cancer du sein durant leurs traitements dans un Centre Anti-Cancer de Batna (Algérie).

**Matériel et méthodes.** – Il s'agissait d'une enquête transversale à visée descriptive réalisée durant 7 mois auprès de femmes atteintes de cancer du sein durant leurs traitements. L'évaluation de leur état nutritionnel a été réalisée selon trois approches : Nutrition Risk Index (NRI) ; évaluation objective de l'état nutritionnel ; Patients Generated-Subjective Global Assessment (PG-SGA).

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**Résultats.** – Cent-soixante-sept patientes ont été incluses. Une patiente sur deux avait un délai total d'accès aux premiers traitements allant de quatre mois à plus de trois ans à partir de la date de survenue des premiers signes. Plus de quatre patientes sur cinq avaient un cancer au stade invasif ou au stade métastatique. Dans notre étude, le calcul du NRI a permis d'estimer à 53 % la prévalence de dénutrition sévère ou modérée contre 63,5 % selon la méthode d'évaluation objective. Selon le score PG-SGA, 77,2 % des patientes étaient à haut risque de dénutrition et 97 % avaient besoin d'interventions et/ou de recommandations nutritionnelles.

**Conclusion.** – La prévalence élevée de dénutrition était certainement, en partie, due au fait que les patientes se présentaient aux traitements à des stades localement avancé ou métastatique. Dans le but de dépister précocement les situations à risque de dénutrition l'évaluation de l'état nutritionnel devrait faire partie intégrante de la prise en charge globale des patientes atteintes de cancer du sein.

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**Mots clés :** Cancer du sein ; Dénutrition ; NRI ; PG-SGA ; Algérie

## 1. Abbreviations

TD	total delay
FTD	first treatment delay
DD	diagnostic delay
CAC	anti cancer center

## 2. Introduction

In 2015, the number of cancer cases worldwide was estimated at 17.5 million cases [1]. According to projections, the number of cancer cases per year is expected to reach 22 million in 2030 [2]. Cancer was the second leading cause of death in the world, with 8.7 million deaths in 2015 [1].

In Algeria, a country with epidemiological, demographic and nutritional transitions, the incidence of cancer is increased. In 2014, the standardized rate incidence of cancer was 118.4 males and 136 women [3].

For women, in the world in 2015, breast cancer was the most common cancer overall. It represented 29% (2.4 million incident cases) of all cancer localizations. It was the deadliest: 14.3% of all cancer deaths (523,000 deaths) [1].

In Europe, breast cancer was the most common with more than 464,000 cases diagnosed in 2012 (29% of total female cancers and 13% of all sexes combined) [4]. The highest standardized incidences were observed in the North of France (Lille) with 115.4 cases per 100,000 women and in Belgium with 109.1 cases per 100,000 women. Conversely, the lowest standardized incidences were observed in Russian Federation (Arkhangelsk) with 39.3 cases per 100,000 women and in Poland (Podkarpackie) with 41.2 per 100,000 women [5].

In Algeria in 2014, breast cancer was the first cancer of women with 59% of all female cancers. The standardized incidence rate of breast cancer was 65.2 per 100,000 women [3].

To face this situation, Algeria has adopted a first national plan to tackle cancer for the period 2015–2019. One of its strategic objective was “to enable the cancer patient, who was undergoing a difficult way, to be taken care, investigated, treated and followed up as soon as possible” [6].

Cancer treatment, especially breast cancer, included chemotherapy, surgery and radiotherapy [7]. The cancer itself and its treatment had negative effects on the nutritional status of

the patient. These effects are partly caused by metabolic changes and by reduced food intake [8,9]. Cancer treatments could damage normal tissues and produce symptoms such as diarrhea, nausea, vomiting, impaired taste and smell, or anorexia. The resulting risk was the onset of malnutrition [7,10]. These symptoms and associated malnutrition are often ignored during the treatment and follow up of cancer patients [11–14].

The prevalence of malnutrition is a function of tumor localization and its extension. It ranged from 36% for breast cancer to more than 80% for stomach or pancreas cancers [15]. At advanced stages of cancer, weight loss (60% of cases > 10%), anorexia (64%), fatigue (67%) and asthenia (64%) affect the majority of patients regardless of tumor localization. The difference in the incidence and severity of weight loss may reflect differences in the natural history of different tumors [16]. In Algeria, 40% of patients with breast cancer consulted at a locally advanced or metastatic stage [6].

Malnutrition is assessed by a set of indicators including weight loss greater than or equal to 10% of the usual body weight for 6 months, greater than or equal to 5% of the usual body weight in a single month. In addition to the chronicity of the disease, this loss is explained by increased metabolic requirements and inadequate nutrition resulting from impaired ability to ingest or absorb food [17].

In Algeria, the assessment of the nutritional status, particularly malnutrition, in patients with breast cancer and undergoing treatment was not systematic. No objective information was available on the incidence and frequency of malnutrition and its risk factors.

Our aim was to estimate the prevalence of malnutrition in patients with breast cancer during treatment and to investigate the importance of the effects affecting malnutrition.

## 3. Material and methods

### 3.1. Study population

This study included women with breast cancer, regardless of the disease stage, intake care (chemotherapy and/or radiotherapy) at the medical oncology and radiotherapy department of the Anti Cancer Center (CAC) of the city of Batna (Algeria)

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