

Title: Evaluation of chemotherapy-induced anaemia and quality of life related to fatigue, in oncology Portuguese patients.

Background: Anaemia is the most common haematological consequence of some cytotoxic chemotherapy regimens. This condition, often either undermanaged or not treated at all, contributes to increased morbidity and reduced quality of life (QoL). Increase of fatigue in cancer patients has been correlated with the development of anaemia. Erythropoiesis-stimulating agents (ESAs), blood transfusions (BT), and iron supplementation (IS) are among the treatments options for anaemia. The administration of ESAs has been demonstrated to reduce the number of transfusion requirements and significantly improve QoL in patients with chemotherapy induced anaemia (CIA). In Portugal, there is a lack of information reporting the proportion of patients with CIA receiving treatment for this condition.

The aim of this study is to evaluate the QoL related to fatigue and additionally, to estimate the incidence and prevalence of CIA in Portuguese cancer patients.

Methods: Multicenter, prospective, observational study in Portuguese oncology patients treated with chemotherapy. Data collected included demographic and clinical characteristics: Hb levels; chemotherapy regimen; anaemia development; anaemia treatment; quality of life measured with the fatigue specific questionnaire of FACIT (Functional Assessment of Chronic Illness Therapy). Anemia World Health Organization classification was used to classify the degree of anemia: grade I (Hb: 9.5 – 10.9 g/dl); grade II (Hb: 8.0 – 9.4 g/dl); grade III (Hb: 6.5 – 7.9 g/dl); and grade IV (Hb: < 6.5 g/dl).

Results: A total of 134 patients from several Portuguese oncology centers were included: 64% women; mean age 57±11years. The distribution of patients according to their pathology was: 43% had breast, 28% lung, 18% colorectal, and 7% gynaecological cancers, and 4% lymphoma. The prevalence of CIA was 47.8% and was more frequent in patients with lung (58.3%) and breast (48.2%) cancers. Most patients with CIA developed grade I anaemia (n=46, 72%), but some had more severe conditions: grade II (n=16, 25%) and grade III (n=2, 3%). Only 33% (n=21) of the anaemic patients received anaemia treatment (37% with ESAs; 29% BT; 14% IS; 10% ESAs+BT; 5% BT+IS; 5% ESAs+BT+IS).

Anaemia treatment with ESAs (all with darbopoetin alfa) led to higher increases on Hb levels (1.27 g/dl) compared with BT treatment (0.7 g/dl).

For patients that developed grade I CIA (n=44), a significant reduction in the FACIT-F scores was observed with the development of anaemia (108.8 vs. 103.0 points, averages). Due to the reduced number of patients it's not possible to evaluate the FACIT-F scores obtained either for grade II (n=3) or grade III (n=0) anaemic patients.

Patients treated with ESAs (n=4) had the highest increases of FACIT-F scores (mean increment of 7.2 points).

Conclusions: This study shows that the development of CIA leads to a decrease in the QoL related to fatigue in patients that receive chemotherapy. Only one third of the patients with CIA received anaemia treatment, which significantly improved their quality of life. Patients treated with ESAs showed the highest increases in Hb levels and in FACIT-F scores.