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**Impact of iron-deficiency management on quality of life in cancer patients: A prospective cohort study (CAMARA study)**

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**Background**

Iron deficiency (ID), whether or not associated with anemia, is very common in patients with solid tumors. ID may cause symptoms such as fatigue that may require therapeutic management. However, its impact on clinical outcomes is poorly described. The aim of this prospective monocentric cohort study was to evaluate the evolution of quality of life (QoL) of these patients after iron supplementation.

**Methods**

We included patients treated for a solid tumor in the day unit of ICO, which were diagnosed with an ID (transferrin saturation coefficient < 20%). This could be a functional (ferritin < 800 ng/ml) or absolute deficit (ferritin < 300 ng/ml), associated or not with an anemia (hemoglobin < 12 g/dl). Patients' QoL was assessed by the Functional Assessment of Cancer Therapy-Anemia (FACT-An) scale. The primary endpoint was its evolution at the intermediate visit, 15-30 days after initial intravenous iron supplementation. The secondary endpoint included this assessment at 6 months and the performance of conventional functional tests at each assessment visit, performed by a physiotherapist, such as the "timed up and go" test, the "6-minute walk" test, the "1-minute stair-climb" test, and the "sit/stand" test.

**Results**

From 02/2014 to 12/2016, 248 patients were enrolled, including 74.5% with absolute ID. Anemia was detected in 191 patients. At the intermediate and final visit, respectively, 203/241 (81.5%) and 160/241 (58.9%) of patients were evaluated. Non-responders were significantly older ( $p=0.01$ ) and in worse general condition with a performance status  $\geq 2$  ( $p=0.03$ ). The FACT-An scale scores improved significantly between inclusion and each assessment visit ( $p=0.0012$  and  $p<0.0001$ , respectively). The most improved dimensions were those assessing physical and functional well-being, fatigue and anemia. Patients who performed the 4 functional tests in all 3 phases had a significant improvement in performance with  $p<0.001$  for each.

**Conclusions**

The supplementation of a functional or absolute ID allows an improvement of the QoL and functional capacities on a long-term basis in cancer patients. Our findings underline the importance of supportive care, including screening for ID, in oncology.

**Clinical trial identification**

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**Legal entity responsible for the study**

Institut de Cancérologie de l'Ouest.

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**Disclosure**

All authors have declared no conflicts of interest.