Peripheral neuropathy is one of the long-term complications of diabetes. In breast cancer diabetic patients, this condition can worsen neurotoxic symptoms induced by taxane-based therapy administration. Chemotherapy induced peripheral neuropathy (CIPN) and its influence on patient’s quality of life (QoL) is evaluated through certified questionnaires (NCI-CTC, EORTC QLQ-CIPN20, FACT-TAXANE).

Neurotoxicity influenced QoL, in both populations, at cycle IV (p<0.001) and cycle XII (p<0.008). Patients with grade 0, 1 and 2 neurotoxicity reported a QLQ-CIPN20 median score of 32, 34 and 43 at cycle IV respectively, and a median value of 27, 33 and 34 at cycle XII respectively. ANOVA test showed a significant worsening of QLQ-CIPN20 and FACT-TAXANE scores at 4 and 12 weeks vs. baseline (p<0.001 for both). Values of QLQ-CIPN20 remained significantly higher in comparison to baseline also at 3 (p<0.001), 6 (p<0.001) and 12 months (p<0.001) follow up. In diabetic population, scores were significantly higher (p<0.05) in all neurotoxicity questionnaires, but no difference in QoL was highlighted by FACT-TAXANE, compared to non diabetic patients.

The use of QLQ-CIPN20 and FACT-TAXANE questionnaires identified neurotoxicity onset and its correlation to QoL, yet at an initial phase of treatment. Diabetic patients presented more severe neurotoxicity, without influencing overall QoL.

Data from stage I-III breast cancer patients treated with taxane-based therapy between 2018 and 2022 were retrospectively analyzed at the Medical Oncology of the University Hospital of Cagliari. 300 patients, median age 57 years (32-85), followed a schedule of PCT 80mg/m2 ± 30 weekly per maximum 12 administrations; 43 patients had diabetes (14,3%). Peripheral neuropathy was evaluated by the NCI-CTC scale at every drug administration. QLQ-CIPN20 and FACT-TAXANE questionnaires were collected at baseline, at 4 and 12 weeks of treatment. Kruskal-Wallis test was used to assess relation between neurotoxicity grade and QoL; ANOVA for repeated measures was used to test differences at different timing. Student’s T-Test was used to analyze differences in diabetic and non-diabetic population.

**BACKGROUND**

**MATERIAL AND METHODS**

**RESULTS**

**CONCLUSIONS**

**BIBLIOGRAPHY**