

Conference Abstracts

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Performance of the CARG Score in Predicting Chemotherapy Toxicity in Adult Cancer Patients: A Real-World Single-Center Study

Wala Ben Kridis, MD^{1,a}; Amal Bouaziz, MD²; Yasmin Daouas, MD²; Afef Khanfir, MD²

¹ Habib Bourguiba University Hospital, Majida Boulila Avenue, Sfax, Sfax, Tunisia

² Habib Bourguiba Hospital, Sfax, Sfax, Tunisia, Tunisia

Corresponding author

^a Wala Ben Kridis, MD, Habib Bourguiba University Hospital, Majida Boulila Avenue, Sfax, Sfax, Tunisia
Email: walabenkridis@yahoo.fr

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Abstract

Background

Chemotherapy-related toxicity remains a major challenge in oncology, impacting treatment delivery and outcomes. The Cancer and Aging Research Group (CARG) score is a validated tool initially developed to predict severe toxicity, integrating both clinical and functional parameters. This study aimed to evaluate its predictive performance in Tunisian cancer patients.

Methods

We conducted a retrospective study including 140 patients treated with chemotherapy at the Department of Medical Oncology in Sfax. Collected variables included age, sex, cancer type and stage, anthropometric data, hemoglobin level, renal function, and treatment characteristics. Geriatric assessment included history of falls, hearing impairment, social activity, functional limitations, and medication management autonomy. The CARG score was calculated for each patient along with the predicted risk of grade 3–5 toxicity. Observed toxicities were graded according to CTCAE criteria (grades 1–5).

Results

The median age was 57 years (range: 19–80), with 64% female patients (90 women and 50 men). Breast cancer was the most frequent (41%), followed by gastrointestinal cancers (29%). Metastatic disease was present in 45.7% of cases. 73.6% of patients developed toxicities. Digestive toxicity was the most frequent (52.1%), followed by hematologic (28.6%), cutaneous (16.4%), and neurological (15.7%), with lower rates of renal (10%), hepatic (4.3%), metabolic (4.3%), and cardiac toxicity (3.6%). Patients aged ≥65 years experienced higher toxicity rates (84.1%). According to the CARG score, 2.8% of patients were classified as low risk (score 0–5), 55% as intermediate risk (score 6–9), and 42% as high risk (score 10–19). A significant association was observed between CARG risk groups and toxicity occurrence ($p < 0.001$). The predictive value of the test was 0.85. The corresponding predicted probabilities of developing grade 3–5 toxicity ranged from 25–32%, 50–54%, and 77–89% for low-, intermediate-, and high-risk groups, respectively. Patients with intermediate scores (6–9) showed a moderate incidence of mainly low-grade toxicity (59.5%, predominantly grade 1–2), whereas those with high scores (10–19) had an increased risk of toxicity (94.9%), predominantly

digestive and of higher severity. Grade ≥ 3 toxicity occurred in 12.6% of patients and observed rates of grade ≥ 3 toxicity were 0%, 1.5%, and 25.4% across low-, intermediate-, and high-risk groups, respectively.

Conclusion

The CARG score showed good predictive accuracy for chemotherapy toxicity in our cohort. Its integration into routine practice may improve risk stratification and guide individualized treatment decisions in adult cancer patients.

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