STUDENTS' CORNER-
LETTER TO THE EDITOR

Incorporating SGLT2 Inhibitors into Breast Cancer Management: Cardio protection During Anthracycline Therapy

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Dear Editor, Sodium-glucose co-transporter 2 (SGLT2) inhibition was first explored 130 years ago by Belgian and French scientists. Currently, four oral SGLT2 inhibitors have been approved by the U.S. Food and Drug Administration and the European Medicines Agency: canagliflozin, dapagliflozin, empagliflozin, and ertugliflozin. SGLT2 inhibitors block glucose reabsorption in the proximal tubules and lead to glucosuria.[1] The cardioprotective and reno protective effects of SGLT2 inhibitors in patients with type 2 diabetes mellitus are well established. They have been shown to reduce cardiovascular mortality and heart failure-related hospitalisations while also slowing the progression of renal disease and stabilizing the estimated glomerular filtration rate.[2]

A meta-analysis published in 2024 examined the cardioprotective role of SGLT2 inhibitors for anthracycline-induced cardiotoxicity. It combined data from three cohort studies, totalling 2817 patients. The study's results demonstrated a significant reduction in overall mortality ($p = 0.005$) and heart failure (HF) hospitalizations ($p = 0.05$).[3] Additionally, a retrospective cohort study investigated diabetic cancer patients receiving anthracyclines, ,comparing those who were taking SGLT2 inhibitors at the time of chemotherapy with those who were not. The study found a significantly lower incidence of cardiac events (heart failure incidence, HF admissions, new-onset cardiomyopathy (≥10% decline in ejection fraction to <53%), and clinically significant arrhythmias) in the SGLT2 inhibitor group ($p = 0.025$).[4]

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A 2022 study reported a five-year prevalence of 321,265 cancer cases in Pakistan and highlighted that Pakistan has the highest breast cancer prevalence in the region.[5] Anthracyclines, a class of chemotherapeutic agents, are known for their efficacy against solid tumours like breast cancer. However, their use is limited by significant cardiotoxic effects, including cardiac dysfunction.[3,4] Given their cardioprotective properties, the authors suggest adding SGLT2 inhibitors to the treatment plan of breast cancer patients receiving anthracyclines. This may reduce these adverse effects and improve overall treatment outcomes.

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FTA: Assisted with writing, reviewed relevant data and final approval.
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