



PalStudent Journal
A Palestinian Scientific Journal for the Youth



ABSTRACTS: VOLUME 7, SPECIAL ISSUE {7th Undergraduate Conference}

ABSTRACT

Incidence, associated factors, and outcomes of CRT in ICU adult patients (>18 years of age) at Sultan Qaboos University Hospital during 2024-2025.

Reem Said Almayahi, Aseel Alrawahi.

supervisor: Dr.Jyoti Burad

Sultan Qaboos University, Oman.

Research Background: Catheter-related thrombosis (CRT) can be a significant complication of central venous catheter (CVC) insertion in ICU patients. Risk factors can include hypercoagulability, immobility, mechanical ventilation, etc. CRT can increase morbidity and mortality through thromboembolic events and systemic complications.

Aim: This research aims to prospectively study the Incidence, associated factors, and outcomes of CRT in ICU adult patients (>18 years of age) at Sultan Qaboos University Hospital during 2024-2025. The research question was whether the incidence of CRT is the same as others and if it causes significant effects on the patients.

Methods: After obtaining ethical approval and informed consent, CRT was investigated in around 500 adult ICU patients who received new CVCs. Daily ultrasound assessments monitored CRT until ICU discharge or three days post-CVC removal. Data on demographics, catheterization details, ICU treatments, and outcomes were collected. Appropriate statistical analysis is in process.

Preliminary results: The incidence of CRT in adult ICU patients at Sultan Qaboos University Hospital is 8%. The median age is 62.0 years, mean weight 52.2 kg, mean hemoglobin 9.2 g/dL, mean platelet count 227.0 ($\times 10^3/\mu\text{L}$), and the mean plasma protein level is 49.7 g/L. The highest

PalStudent Journal

Correspondence concerning this article should be addressed to the mentioned authors at the mentioned institutes.

Copyright © 2025 Al-Quds University, Deanship of Scientific Research. All rights reserved.

E-mail: research@admin.alquds.edu

Palestine, Abu Dis, Al-Quds University



lactate levels for patients with and without thrombus were similar (1.9 versus 1.8, respectively). Patients with blood group O Positive and females have a higher association with CRT. Among 50 patients, median ICU stay was 7.0 days (IQR: 6.0–17.25) without thrombus (n=46) and 6.5 days (IQR: 3.25–15.0) with thrombus (n=4). Mortality was higher in thrombus versus non-thrombus cases ($\approx 70\%$ vs. $\approx 30\%$). Patients with thrombus had a median ICU stay of 6.5 days compared to 7.0 days for those without thrombus. Mortality was higher in thrombus patients, emphasizing the need for early detection and prevention. These findings highlight CRT as a potential risk factor for worse outcomes.

Conclusion: Catheter-related thrombosis (CRT) is a significant complication in ICU patients with central venous catheters, contributing to increased morbidity and mortality. Our study at Sultan Qaboos University Hospital found an 8% incidence of CRT, with higher associations observed in females and patients with blood group O positive. Mortality rates were notably higher in patients with thrombus, highlighting the potential impact of CRT on patient outcomes. These findings emphasize the importance of early detection, continuous ultrasound monitoring, and preventive strategies to mitigate CRT risks. Further analysis will provide deeper insights into associated factors and potential interventions to improve patient care in critical settings.