

Medical Adhesive-Related Skin Injury (MARSI) in Oncological Patients with Central Venous Access: New Technologies for Prediction and Evaluation

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INTRODUCTION

- MARSI are skin injuries resulting from the use of medical adhesives like tapes and dressings
- These injuries negatively impact patient quality of life, increase hospitalization times, and raise healthcare costs
- Oncological patients are particularly vulnerable due to chemotherapy-induced skin sensitivity and structural changes
- CVC-related MARSI increase the risk of catheter infections, accidental removal, and therapeutic latency

OBJECTIVE

- Evaluate the prevalence of MARSI in oncological patients with central venous access
- Analyze the functionality of new technologies, specifically the 'Wound Scanner', for early diagnosis and evaluation.

MATERIALS & METHODS

- Data Source: Systematic collection from PubMed and Google Scholar (June - Sept 2024)
- Selection: 23 articles identified as pertinent to the study
- Research Protocol: Developed to test the Wound Scanner on oncological patients with PICC and existing MARSI

NEW TECHNOLOGY: THE WOUND SCANNER

- KroniKare Wound Scanner: An AI-driven multispectral imaging system
- Functionality: Combines visible, thermal, and 3D imaging (via IR laser and stereoscopic cameras)
- Capabilities: Automated measurement (length, width, depth) and tissue classification
- Speed: Generates detailed reports in under 30 seconds—30 times faster than traditional methods
- Early Detection: Identifies deep-tissue inflammation or ischemia not yet visible to the naked eye

RESULTS

- MARSI Prevalence: Found to be 35% in oncological populations with PICCs
- Common Manifestations
 - Contact Dermatitis (17%)
 - Epidermal Stripping (9%)
 - Tension Injury (6%)
 - Folliculitis (3%)
- Risk Factors: Age ≥ 50 years and chemotherapy agents (e.g., Oxaliplatin) significantly correlate with MARSI development

CONCLUSIONS

- Prevention is crucial: Includes proper adhesive selection, low-trauma removal techniques, and skin barriers
- AI and the Wound Scanner represent a significant advancement for objective assessment and early warning of complications
- Future studies should integrate CVC-specific data into these algorithms to optimize vascular access management

