

Medical adhesive–related skin injury(MARSI) in chemotherapy patients: incidence and risk signals from a multi-year vascular access dataset

Background: MARSI impairs comfort, delays therapy and increases cost; Oncology patients may be vulnerable due to immunosuppression, altered skin physiology, and frequent dressing changes. Published cancer cohorts report PICC-site MARSI around 9–10%, driven by skin and dressing factors, yet real-world rates vary.

Aim: To estimate MARSI incidence in chemotherapy patients within a large NHS vascular access service and explore whether susceptibility differs by tumour group, device, and securement.

Methods: Service-evaluation of 6,924 vascular access episodes (2023–2025) at a tertiary NHS trust. MARSI was identified via a dedicated data field and analysed data using generative pre-trained transformer which created a MARSI flag plus text mining of clinical notes. We compared chemotherapy versus non-chemotherapy episodes; within Chemotherapy, we stratified by specialty (Oncology vs Haematology), inferred tumour site from clinical descriptors, and examined device and securement categories.

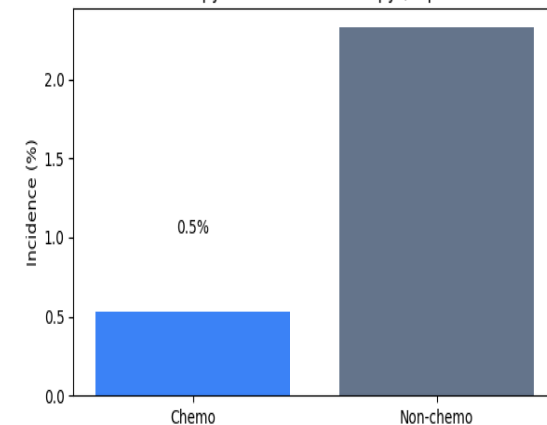
Results: Overall, MARSI incidence was 1.94%. MARSI was recorded less often in chemotherapy than other indications (0.53% vs 2.33%). Within the Chemotherapy cohort, Oncology cases had higher MARSI than Haematology (0.92% vs 0.14%), with colorectal showing the highest rate (2.94%) among inferred tumour sites.

Across all indications, Hickman lines had the highest MARSI incidence (9.09%), exceeding PICCs (~3.3%) and midlines ($\leq 1.24\%$). In Chemotherapy, Secur-A-Cath securement predominated and was associated with a 0.54% MARSI rate; tissue adhesive use showed a small absolute difference (0.61% vs 0.43%). Potential increased incidence with Hickman line patient cohort (in Haematology) could be due to the number of patients with graft versus host disease (GVHD) affecting the skin.

Conclusion: Recorded MARSI was uncommon in chemotherapy pathways at our Centre, and that low rates are due to them following local dressing algorithm, (which included the use of adhesive remover and non sting barrier film before dressing application) but concentrated in solid-tumour Oncology, particularly Colorectal, and was higher with Hickman lines.

Differences from published prospective cohorts suggest under-ascertainment and highlight the need for standardised MARSI surveillance (skin scoring, dressing type, barrier film use) and device-specific preventive bundles. Prospective evaluation will clarify true risk and test interventions aligned with consensus recommendations.

incidence: Chemotherapy vs Non-chemotherapy (Imperial VA dataset)



MARSI incidence by device type (top 6)

