

Monitoring of Short Peripheral Venous Catheter (SPVC), MARSI Yes or No Medical Clinic

Period: April 2023 – December 2025

Alvarez.,C. Gaggero., D. Armango., A. Vidiella., G.



Background

Active surveillance or monitoring of SPVC is an essential strategy to ensure the safety of hospitalized patients. The literatura shows that these events occur in approximately 30% to 50% of cases. The historical phlebitis rate in this private institution ranged between 3.6% and 22.17% during different periods from 2007–2022, with 18 cases of thrombophlebitis detected in 1,610 insertion checklists completed (2016–2017). The implementation of standardized protocols for insertion, maintenance, removal, and the change of material from PTFE to polyurethane significantly reduced the incidence of local and systemic complications, including the prevention of medical adhesive-related skin injuries (MARSI). The establishment of a specific program and the incorporation of the Link Nurse into the team optimized safe care practices and reduced these types of SPVC-related events to $\leq 1\%$. The active adoption of these programs since 2022 not only improves care quality but also strengthens the culture of safety and the prevention of adverse events in hospitalized patients.

Materials and Methods:

- Descriptive cross-sectional study.
- Surveillance or monitoring protocol (standardized documents for insertion, maintenance, and removal; early detection of MARSI, phlebitis, infiltration, extravasation; use of checklists, bundles, among others).
- Medical supplies (antiseptics, stabilization adhesives, MARSI prevention kits).
- Recording tools (MARSI assessment scale, nursing records, others).
- Educational resources (concept maps, infographics, clinical simulation).
- Monitoring systems (active monitoring, follow-up alerts).

Study Population: All hospitalized patients in the medical clinic with a short peripheral venous catheter.

Study Period: April 2023 – December 2025.

General Objective:

To reduce the incidence of adverse events such as phlebitis, infiltration, extravasation, occlusion, MARSI, and other events in hospitalized patients in the medical clinic through the use of an active surveillance tool applied within a protocol for the safe management of SPVC from April 2023 to December 2025.

Results:

A total of 4,695 SPVCs were evaluated.

- April 2023 – February 2024:** Total SPVC: 1,780. Phlebitis: 36 (2%), Infiltration: 25 (4.4%), Extravasation: 9 (0.5%), Dislodged: 50 (2.8%), Dislodged for study: 30 (1.6%), Occlusion: 40 (2.2%).
- March 2024 – March 2025:** Total SPVC: 1,545. Phlebitis: 25 (1.6%), Infiltration: 20 (1.2%), Extravasation: 4 (0.2%), Dislodged: 70 (4.5%), Dislodged for study: 35 (2.2%), Occlusion: 10 (0.6%).
- April – December 2025:** Total SPVC: 1,370. Phlebitis: 14 ($\leq 1\%$), Infiltration: 12 (0.8%), Extravasation: 0, Dislodged: 30 (2.19%), Dislodged for study: 20 (1.4%), Occlusion: 9 (0.6%).

During this study period, no MARSI events associated with the SPVC stabilization system were recorded.

Chart n1:

Adverse effects of PVAC inserted April 2023-February 2024 at CyMSA						
Total PVAC	Infiltration	Extravasation	Displaced	Others	Occlusion	Phebitis
1780	25	9	50	30	40	36
%	1,40	0,51	2,81	1,69	2,25	2,02

Data: Nurse Link, Control infections

Chart n2:

Adverse effects of PVAC inserted March 2024- March 2025 at CyMSA						
Total PVAC	Infiltration	Extravasation	Displaced	Others	Occlusion	Phebitis
1545	20	4	70	35	10	25
%	1,29	0,26	4,53	2,27	0,65	1,62

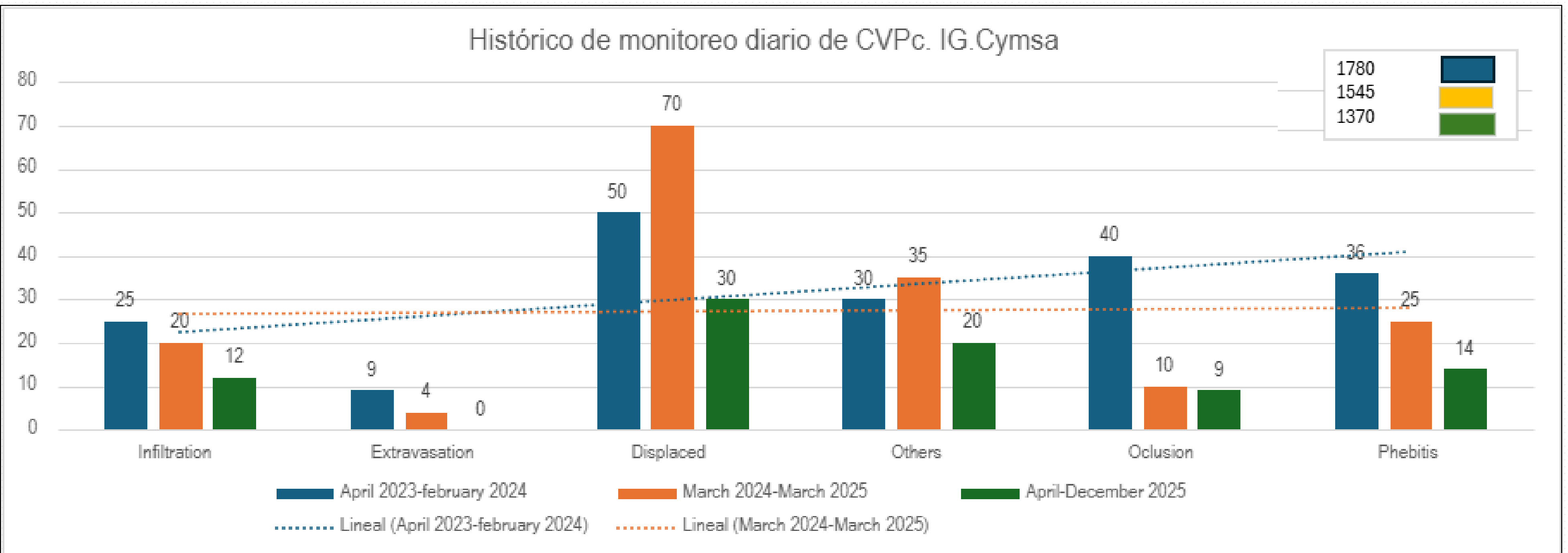
Data: Nurse Link, Control infections

Chart n3:

Adverse effects of PVAC inserted April -December 2025 at CyMSA						
Total PVAC	Infiltration	Extravasation	Displaced	Others	Occlusion	Phebitis
1370	12	0	30	20	9	14
%	0,88	0	2,19	1,46	0,66	1,02

Data: Nurse Link, Control infections

Graphic 1



Data: Nurse Link, Control infections

Conclusions:

The incorporation of the Link Nurse and the daily monitoring and recording of SPVC insertion and maintenance indicators in hospitalized patients were key to reducing the historical rate of these events from 22.17% to $\leq 1\%$ between 2007–2025. Between 2023–2025, no MARSI events associated with SPVC were recorded.

Bibliography :1.PRNewswire. (2014). Global Peripheral I.V. Catheter Market 2014-2018. Available at: <http://www.prnewswire.com/news-releases/global-peripheral-iv-catheter-market-2014-2018-257019061.html>. 2.Infusion Therapy Standards of Practice – INS 2016; pp. 91–93.. 3. Best Practice Guidelines in the Care and Maintenance of Pediatric Patients, 2015.. 4.Guideline Peripheral Intravenous Catheter (PIVC): Insertion – Point of Care Tool. Department of Health, Australia, 2012; pp. 2–11.. 5. Extravasation Prevention and Treatment. Available at: www.msal.gob.ar/images/stories/bes/.../0000000579cnt-46-afiche-enfermeria.pdf