POEMS SYNDROME IN THE POST-PANDEMIC ERA: A RARE DISEASE WITH RISING INCIDENCE—EXPERIENCE FROM A SINGLE ROMANIAN CENTER

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1. Introduction

POEMS syndrome — ***Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal gammopathy,*** **and** ***Skin changes*** — is an exceptionally rare, often underrecognized plasma cell disorder, with a global incidence of approximately 0.3 per 100,000 individuals. Its complex, multisystemic manifestations frequently obscure the diagnosis, leading to significant delays and frequent misclassification.

2. Aim

In recent years, our center has documented a marked and unexpected surge in newly diagnosed POEMS cases. This trend raises a pivotal question: ***does it signify heightened clinical vigilance and improved diagnostic precision, or could it represent a true post-pandemic epidemiological shift — potentially driven by immune dysregulation in the aftermath of COVID-19?***

3. Objectives

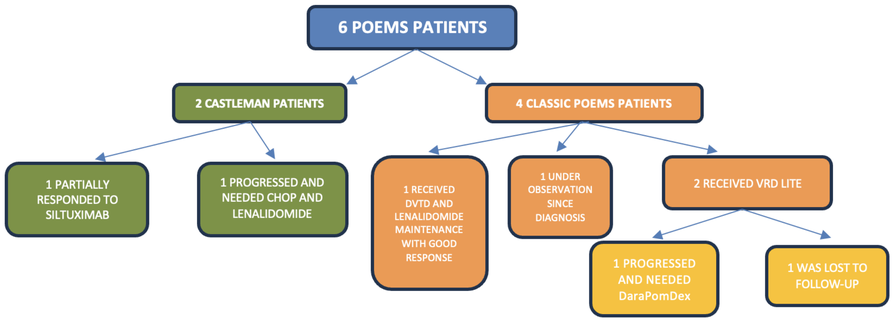
To characterize the diagnostic and therapeutic patterns of POEMS syndrome in a single-center Romanian cohort diagnosed between 2021 and 2024, in the context of an unexpectedly high case frequency. The study aims to explore whether this trend may reflect a true post–COVID-19 change in incidence and to provide a foundation for a future multicentric investigation.

4. Methods

We performed a retrospective review of all POEMS syndrome cases diagnosed at the Department of Hematology I, Colentina Clinical Hospital, between 2021 and 2024. Collected data included clinical features, subtype classification, treatment regimens, and therapeutic responses. Particular focus was placed on uncommon presentations, with emphasis on cases of the Castleman variant.

5. Results

Six patients were diagnosed during the study period, two of whom had the Castleman variant. One responded partially to **Siltuximab**; the other progressed and required **Lenalidomide followed by CHOP**. Among the classic POEMS cases, one received **DVTd** followed by **Lenalidomide** maintenance with a favorable response. Two received **VRD-lite**; one progressed to **DaraPomDex**, and the other was lost to follow-up. One patient remains under observation.



6. Key Point

100% of POEMS cases (2021-2024) in our clinic had prior COVID-19. Only one required hospitalization – Castleman variant with loss of Siltuximab response.

7. Discussion

The marked rise in POEMS diagnoses within a short period prompts consideration of a potential link to prior **SARS-CoV-2 infection**. All patients in our 2021–2024 cohort had a history of COVID-19, although only one required hospitalization — notably, the Castleman variant case that lost response to Siltuximab. SARS-CoV-2 infection is known to induce **immune dysregulation, endothelial injury, and elevated cytokines** such as IL-6 and VEGF, all of which are implicated in POEMS pathogenesis. Post-viral immune activation **may unmask previously silent clonal plasma cell populations or precipitate autoimmune neuropathies**, creating a clinical picture overlapping with, or accelerating, POEMS syndrome. While causality cannot be established, this consistent history of prior COVID-19 across our cases underscores the need for **larger studies exploring post-infectious mechanisms in rare plasma cell disorders**.

8. References

1. Afridi F, Otoya J, Bunting SF, Chaaya G. An Unfortunate Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal Gammopathy, and Skin Change (POEMS). *Cureus*. 2017;9(3):e1086. Published 2017 Mar 8. doi:10.7759/cureus.1086
2. Silva MJA, Ribeiro LR, Gouveia MIM, et al. Hyperinflammatory Response in COVID-19: A Systematic Review. *Viruses*. 2023;15(2):553. Published 2023 Feb 16. doi:10.3390/v15020553
3. Xu SW, Ilyas I, Weng JP. Endothelial dysfunction in COVID-19: an overview of evidence, biomarkers, mechanisms and potential therapies. *Acta Pharmacol Sin*. 2023;44(4):695-709. doi:10.1038/s41401-022-00998-0
4. Emina Karahmet Sher, Adnan Ćosović, Amina Džidić-Krivić, et al. Covid-19 a triggering factor of autoimmune and multi-inflammatory diseases. Life Sciences. Volume 319. 2023;121531.ISSN 0024-3205. https://doi.org/10.1016/j.lfs.2023.121531.

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