



An Algorithmic Approach for Early Diagnosis and Management of Capillary Leak Syndrome

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Background

- ❖ Capillary leak syndrome (CLS) is a life-threatening disease characterized by capillary hyperpermeability leading to edema or anasarca, hypotension, hypoalbuminemia, and hemoconcentration.¹
- ❖ Signs and symptoms of CLS are nonspecific leading to CLS being underdiagnosed.^{1,2}
- ❖ CLS can be idiopathic or secondary to certain autoimmune diseases, infections (sepsis), snakebites, cancers, and drugs.^{1,3}
- ❖ Idiopathic CLS, also called Clarkson's disease, has low prevalence (<1/1,000,000) with approximately 260 cases reported worldwide.^{2,3}
- ❖ For secondary CLS, nearly 50% of cases in patients with cancer are related to anticancer drugs, but the underlying mechanisms are not well-known.⁴⁻⁶
- ❖ In total, roughly 45 antineoplastic and immunomodulatory drugs have been associated with CLS^{4,5} with episodes occurring at a median of 8 days after drug administration⁵ while median time to resolution has been approximately 12 days.⁷
- ❖ Most drug-induced CLS occurrences are serious adverse events (86%) with a 27% mortality rate (related or unrelated to CLS).⁵
- ❖ Since there are no standard recommendations for drug-induced CLS diagnosis and treatment, providers use their institutional guidelines or follow guidelines from the prescribing information.
- ❖ Given the different types of CLS, the objective of this abstract is to provide straightforward guidelines for early diagnosis and management of drug-induced CLS from an advanced practice provider's perspective.
- ❖ Therefore, we have created a CLS algorithm that outlines initial assessments and treatment because early intervention and appropriate management help reduce drug-induced CLS mortality.

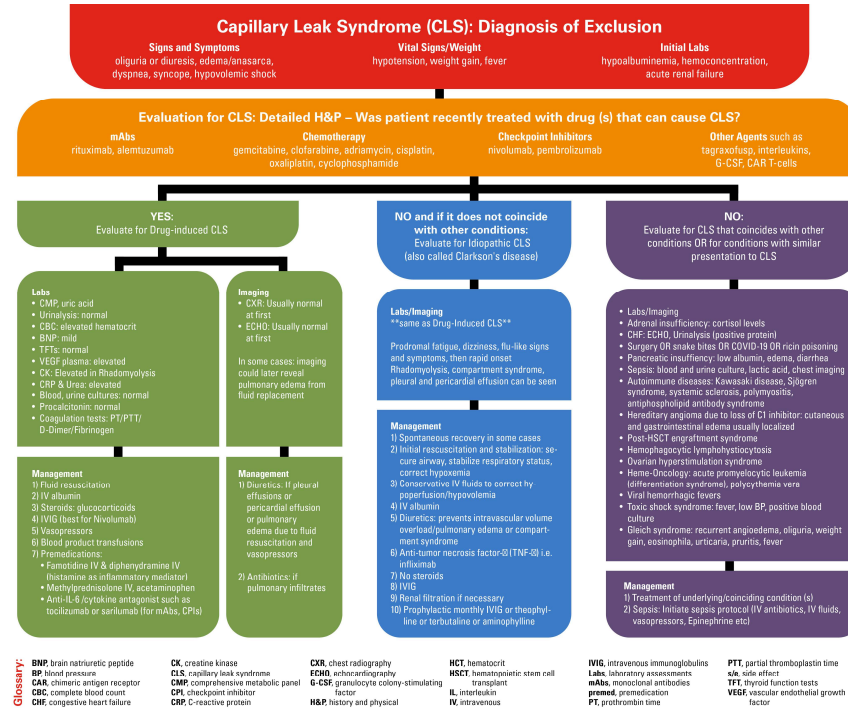
Purpose

- ❖ To share life-saving information with nurse practitioner (NP) peers about a rare but life-threatening syndrome, capillary leak syndrome (CLS), which is observed as an adverse effect of some drugs used in cancer treatments or noted during some health events.
- ❖ Given the increasing number of cancer patients that NPs will be treating in the coming years as well as CLS's idiopathic nature in some cases, having this CLS algorithm is a valuable tool for NPs' clinical practice

Methods

- ❖ A literature review using scientific databases PubMed, CINAHL and the Google Scholar search tool yielded nearly 30 scientific works. We focused on 12 publications from 2017-2021.
- ❖ Key words: capillary leak syndrome, CLS, systemic capillary leak syndrome, drug-induced CLS, idiopathic CLS

Figure. Algorithmic Approach to Diagnosis and Management of Capillary Leak Syndrome



Conclusion

- ❖ Capillary leak syndrome (CLS) is a rare but life-threatening health condition that nurse practitioners need to be aware of.
- ❖ CLS is either idiopathic or secondary as an adverse effect of some drugs used in different cancer treatments.
- ❖ This CLS algorithm is a clinical and educational tool that eases diagnosis and management of CLS which greatly improve outcomes for patients.
- ❖ CLS is relevant to the contemporary NP's practice environment given the continued increase of the number of cancer patients in the coming decades who will be treated by NPs of various specialties.

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