

Provincial Laboratory Services



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One Island Health System

Updates on Body Fluid Testing

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This information applies to: Physicians, Diagnostic Imaging, Clinical Instructors/Educators, PEI Hospital Laboratories

The pathological accumulation of serous fluids in pleural, peritoneal or pericardial spaces occurs in a range of conditions. Biochemical analysis of extravascular body fluids compared to serum, among other investigations, provides a valuable tool for the differentiation between transudative and exudative effusions and for the assessment of effusion etiology¹. To facilitate biochemical testing of body fluids and for the ease of results interpretation we have introduced a few changes:

1. New Body fluid-specific care sets were generated to facilitate ordering of appropriate biochemical tests and avoid irrelevant orders. For more details please check the CIS Bulletin (June, pages 8-10).
2. The biochemical criteria for exudative effusions are:
 - a. **Pleural fluid** is classified based on Light's criteria¹. Pleural fluid can be categorized as exudate if at least one of the following is true:
 - i. Ratio pleural fluid protein/serum protein >0.5 ,
 - ii. Ratio pleural LDH/serum LDH >0.6 , or
 - iii. Pleural fluid LDH >200 U/L or $>2/3$ of the upper limit of normal of serum LDH
 - b. The same criteria can be adopted for **pericardial fluid** but must be applied with great caution and should not be the sole diagnostic framework².
 - c. **Peritoneal fluid** can be classified as exudate if the serum-ascites albumin gradient (SAAG) which is defined as the difference between serum and peritoneal fluid albumin is <11 g/L¹.
3. CIS will look for serum protein, LDH or albumin results for 24 hours before or after body fluid collection time, will automatically calculate the above parameters (ratio or SAAG) and provide an interpretive comment with body fluid-specific criteria (above).
4. A "non-reportable" comment will be provided in cases where serum or body fluid protein, LDH and/or albumin levels are outside the measuring ranges of their assays; where results are considered inaccurate.

REFERENCES:

1. Burtis CA Ashwood ER, Bruns DE. *Tietz textbook of clinical chemistry and molecular diagnostics*. (Elsevier/Saunders, 2012).
2. Kopicinovic, L. M. & Culej, J. Pleural, peritoneal and pericardial effusions - a biochemical approach. *Biochem. Medica* **24**, 123-137 (2014).

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