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| **Bilirubin, Body Fluid** |
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| **Biliary/​Hepatic Bilirubin** |
| Clinical Indications | Supportive evidence for biliary and/or hepatic source of fluid accumulation |
| Identification of bile leakage |
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| Reference Interval and/or Interpretive Information | After hepatobiliary and/or pancreatic surgery, bile leakage has been defined by the International Study Group of Liver Surgery as “bilirubin concentration in the drain fluid at least 3 times the serum bilirubin concentration on or after postoperative day 3 or as the need for radiologic or operative intervention resulting from biliary collections or bile peritonitis.” [1] |
| In Jackson Pratt (JP) drain fluid, one study has demonstrated that a drain fluid bilirubin of 4.9 mg/dL or greater (or a drain fluid-to-serum bilirubin ratio of 5.4 or greater) had a 100% sensitivity and specificity for the identification of bile leaks. [2] |
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| References | [1] Koch M, et al. Bile leakage after hepatobiliary and pancreatic surgery: a definition and grading of severity by the International Study Group of Liver Surgery. Surgery. 2011;149(5):680–8. |
| [2] Darwin P, et al. Jackson Pratt drain fluid-to-serum bilirubin concentration ratio for the diagnosis of bile leaks. Gastrointest Endosc. 2010;71(1):99–104. |
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| **Bilirubin, Drain Fluid** |
| Clinical Indications | Identification of bile leakage |
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| Reference Interval and/or Interpretive Information | After hepatobiliary and/or pancreatic surgery, bile leakage has been defined by the International Study Group of Liver Surgery as “bilirubin concentration in the drain fluid at least 3 times the serum bilirubin concentration on or after postoperative day 3 or as the need for radiologic or operative intervention resulting from biliary collections or bile peritonitis.” [1] |
| In Jackson Pratt (JP) drain fluid, one study has demonstrated that a drain fluid bilirubin of 4.9 mg/dL or greater (or a drain fluid-to-serum bilirubin ratio of 5.4 or greater) had a 100% sensitivity and specificity for the identification of bile leaks. [2] |
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| References | [1] Koch M, et al. Bile leakage after hepatobiliary and pancreatic surgery: a definition and grading of severity by the International Study Group of Liver Surgery. Surgery. 2011;149(5):680–8. |
| [2] Darwin P, et al. Jackson Pratt drain fluid-to-serum bilirubin concentration ratio for the diagnosis of bile leaks. Gastrointest Endosc. 2010;71(1):99–104. |
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| **Peritoneal/​Ascites Fluid Bilirubin** |
| Clinical Indications | Supportive evidence for differentiation of exudates and transudates |
| Identification of choleperitoneum |
| Identification of bile leakage |
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| Reference Interval and/or Interpretive Information | As supportive evidence to Light’s criteria for the differentiation of exudates from transudates, an ascites fluid-to-serum bilirubin ratio of 0.6 may be consistent with the presence of an exudate. [1] |
| An ascites fluid bilirubin concentration >6 mg/dL with an ascites fluid-to-serum bilirubin ratio of >1 has been observed in choleperitoneum associated with gallbladder rupture.[2]; based on a single case |
| After hepatobiliary and/or pancreatic surgery, bile leakage has been defined by the International Study Group of Liver Surgery as “bilirubin concentration in the drain fluid at least 3 times the serum bilirubin concentration on or after postoperative day 3 or as the need for radiologic or operative intervention resulting from biliary collections or bile peritonitis.” [3] |
| In Jackson Pratt (JP) drain fluid, one study has demonstrated that a drain fluid bilirubin of 4.9 mg/dL or greater (or a drain fluid-to-serum bilirubin ratio of 5.4 or greater) had a 100% sensitivity and specificity for the identification of bile leaks. [4] |
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| References | [1] Elis A, et al. Ascitic fluid-to-serum bilirubin concentration ratio for the classification of transudates or exudates. Am J Gastroenterol. 1998;93(3):401–3. |
| [2] Runyon BA. Ascitic fluid bilirubin concentration as a key to choleperitoneum. J Clin Gastroenterol. 1987;9(5):543–5. |
| [3] Koch M, et al. Bile leakage after hepatobiliary and pancreatic surgery: a definition and grading of severity by the International Study Group of Liver Surgery. Surgery. 2011;149(5):680–8. |
| [4] Darwin P, et al. Jackson Pratt drain fluid-to-serum bilirubin concentration ratio for the diagnosis of bile leaks. Gastrointest Endosc. 2010;71(1):99–104. |
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| **Pleural Fluid Bilirubin** |
| Clinical Indications | Supportive evidence for differentiation of exudates and transudates |
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| Reference Interval and/or Interpretive Information | As supportive evidence to Light’s criteria for the differentiation of exudates from transudates, a pleural fluid-to-serum bilirubin concentration ratio of 0.6 may be consistent with the presence of an exudate. [1] |
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| References | [1] Meisel S, Shamiss A, Thaler M, Nussinovitch N, Rosenthal T. 1990. Pleural fluid-to-serum bilirubin concentration ratio for the separation of transudates from exudates. CHEST. 98(1):141-144.  |
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| https://www.aruplab.com/bodyfluids |