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| **Amylase, Body Fluid** |
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| **Amylase, Drain Fluid** |  |
| Clinical Indications | Evaluation of potential pancreatic fistula |
| Supportive evidence for source of fluid accumulation |
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| Reference Interval and/or Interpretive Information | Drain fluid amylase should be interpreted in the context of source and in correlation with serum results and/or other clinical evidence. |
| After pancreaticoduodenectomy, postoperative pancreatic fistula has been defined by the International Study Group on Pancreatic Fistula Definition (ISGPF) as “a drain output of any measurable volume of fluid on or after postoperative day 3 with an amylase content greater than 3 times the serum amylase activity.” [1] |
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| References | [1] Bassi C, et al. Postoperative pancreatic fistula: an international study group (ISGPF) definition. Surgery. 2005;138(1):8–13. |
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| **Pancreatic Fluid Amylase** |
| Clinical Indications | Supportive evidence in the differentiation of pancreatic cysts from pseudocysts |
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| Reference Interval and/or Interpretive Information | In the context of pancreatic cyst versus pseudocyst differentiation, a pancreatic fluid amylase activity <250 U/L (the upper limit of the normal serum value for amylase in a meta-analysis) is evidence against the possibility that the fluid collection represents a pseudocyst. [1] |
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| References | [1] Van der Waaij LA, et al. Cyst fluid analysis in the differential diagnosis of pancreatic cystic lesions: a pooled analysis. Gastrointest Endosc. 2005;62(3):383–9. |
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| **Peritoneal/​Ascites Fluid Amylase** |
| Clinical Indications | Evaluation of pancreatic ascites |
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| Reference Interval and/or Interpretive Information | In normal peritoneal fluid, amylase activity is comparable to that observed in serum or plasma.[1,2] |
| Pancreatic ascites may be associated with peritoneal amylase activity 3–5 times greater than a corresponding serum or plasma level.[1,2,3] |
| Routine analysis of peritoneal fluid amylase activity is usually not clinically indicated.[1] |
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| References | [1] Kjeldsberg CR, et al. Chapter 6: Peritoneal fluid. In: Hussong JW and Kjeldsberg CR, eds. Kjeldsberg’s Body Fluid Analysis. Chicago, IL: ASCP Press; 2015. |
| [2] Runyon BA. Amylase levels in ascitic fluid. J Clin Gastroenterol. 1987;9(2): 172–4. |
| [3] Block DR, et al. Quick Guide to Body Fluid Testing. Washington, DC: AACC Press; 2015. |
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| **Pleural Fluid Amylase** |  |
| Clinical Indications | Routine analysis of pleural fluid amylase activity with pleural effusion is usually not clinically indicated.[1,2] |
| Use has been suggested when there is an elevated pretest probability of acute pancreatitis, chronic pancreatic disease, or esophageal rupture.[2] |
| May also provide supportive evidence in the evaluation of suspected pancreatic-pleural fistula.[3] |
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| Reference Interval and/or Interpretive Information | Elevated pleural fluid amylase activity is a level greater than the upper reference limit for serum and a fluid-to-serum amylase ratio of >1.4 |
| While high pleural amylase levels have also been associated with some malignancy-related pleural effusions (such as adenocarcinoma) in some reports [5,6,7], use for such evaluations is generally not suggested (due to specificity concerns) and would be considered secondary to more specific methods such as cytology. |
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| References | [1] Kjeldsberg CR, et al. Chapter 5: Pleural and pericardial fluid. In: Hussong JW and Kjeldsberg CR, eds. Kjeldsberg’s Body Fluid Analysis. Chicago, IL: ASCP Press; 2015. |
| [2] Branca P, et al. Routine measurement of pleural fluid amylase is not indicated. Arch Intern Med. 2001;161(2):228–32. |
| [3] Elkaoui H, et al. Pancreatic-pleural fistula in chronic pancreatitis. Arab J Gastroenterol. 2012;13(1):38–40. |
| [4] Sahn SA. Getting the most from pleural fluid analysis. Respirology. 2012;17: 270–7. |
| [5] Clinical and Laboratory Standards Institute. C49-A Analysis of body fluids in clinical chemistry. https://clsi.org/media/1353/c49a\_sample.pdf. |
| [6] Kramer MR, et al. High amylase levels in neoplasm-related pleural effusion. Ann Intern Med. 1989;110:567–9. |
| [7] Villena V, et al. Amylase levels in pleural effusions: a consecutive unselected series of 841 patients. CHEST. 2002;121(2):470–4. |
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| https://www.aruplab.com/bodyfluids |