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DAFTAR ISI

Liver Blood Tests in the Management of Suspected Choledocholithiasis

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ABSTRAK (ENGLISH)

Objective

The likelihood of common bile duct (CBD) stones considers liver blood tests (LBTs) if they are markedly altered only. The aim of our study was to find a reliable tool based on LBTs to predict the presence of CBD stones.

Methods

We retrospectively considered all patients who underwent magnetic resonance cholangiopancreatography (MRCP) because of suspected CBD stones from January 2014 to June 2019. Demographic, clinical data, and LBT values were collected and analyzed.

Results

We selected 191 patients, 64 (33.5%) with positive MRCP and 127 (66.5%) with negative MRCP. The analysis showed that our compound LBT-based score had 83.6%, 90.7%, and 90.6% sensitivity, specificity, and negative predictive values, respectively, in determining MRCP results.

Conclusion

We designed a weighted score with high diagnostic power in determining MRCP results that could help in differentiating between candidates for primary cholecystectomy and patients who benefit from preoperative MRCP.

Anti-S Antibody: A Rare Cause of Fetal Hydrops in a Previously Sensitized Mother

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ABSTRAK (ENGLISH)

Anti-S is an IgG antibody and a rare cause of hemolytic disease of the fetus and newborn. A 38 year old woman with blood group O Rh-positive presented to the hospital at 30 weeks gestation. Her past medical history was significant for sickle cell disease and alloantibodies against the Fya, Jkb, and S antigens. Obstetric ultrasound showed the fetus to have developed scalp edema, cardiomegaly, small pericardial effusion, and large ascites. Periumbilical blood sampling results showed the fetus blood type as blood group O Rh-positive with anti-S and hemoglobin of 2 gm/dL. After multiple intrauterine transfusions of red blood cells, the fetal hemoglobin increased to 12.9 g/dL. Anti-S can cause fetal hydrops, although it is rare. All pregnant women with anti-S should be closely monitored and treated during pregnancy for the possibility of developing a severe hemolytic disease of the fetus and newborn.

Relationship Between Gene Polymorphism of Methylenetetrahydrofolate Reductase C677T and Left Ventricular Hypertrophy in Chinese Patients with Chronic Kidney Disease

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ABSTRAK (ENGLISH)

Objective

This study aimed to investigate the relationship between the gene polymorphism of methylenetetrahydrofolate reductase (*MTHFR*) C677T and left ventricular hypertrophy (LVH) in patients with chronic kidney disease (CKD).

Methods

A total of 763 Chinese patients with CKD undergoing genetic testing were included in the study. The association between the gene polymorphism of *MTHFR* C677T and echocardiographic parameters was analyzed through univariate and multivariate analyses.

Results

We found a remarkably positive association between *MTHFR* C677T gene polymorphism and LVH indexes, including interventricular septal thickness ($F = 3.8$; $P = .022$), left ventricular posterior wall thickness ($F = 3.0$; $P = .052$), left ventricular mass ($F = 3.9$; $P = .022$), and left ventricular mass index ($F = 2.6$; $P = .075$). After adjusting for the potential confounders linking the polymorphism,we found that the positive association between the polymorphism and LVH indexes still existed in patients with CKD in some multiple linear regression models ($P < .05$).

Conclusion

MTHFR C677T gene polymorphism may be a genetic susceptibility marker for the development of LVH in patients with CKD.

Dokumen 4 dari 16

Utility of Antigen-Based Rapid Diagnostic Test for Detection of SARS-CoV-2 Virus in Routine Hospital Settings

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ABSTRAK (ENGLISH)

Objective

This study aims to evaluate the performance of an antigen-based rapid diagnostic test (RDT) for the detection of the SARS-CoV-2 virus.

Methods

A cross-sectional study was conducted on 677 patients. Two nasopharyngeal swabs and 1 oropharyngeal swab were collected from patients. The RDT was performed onsite by a commercially available immune-chromatographic assay on the nasopharyngeal swab. The nasopharyngeal and oropharyngeal swabs were examined for SARS-CoV-2 RNA by real-time reverse-transcription quantitative polymerase chain reaction (RT-qPCR) assay.

Results

The overall sensitivity of the SARS-CoV-2 RDT was 34.5% and the specificity was 99.8%. The positive predictive value and negative predictive value of the test were 96.6% and 91.5%, respectively. The detection rate of RDT in

RT-qPCR positive results was high (45%) for cycle threshold values <25.

Conclusion

The utility of RDT is in diagnosing symptomatic patients and may not be particularly suited as a screening tool for patients with low viral load. The low sensitivity of RDT does not qualify its use as a single test in patients who test negative; RT-qPCR continues to be the gold standard test.

Cell-Derived Microparticles in Blood Products from Blood Donors Deficient in Glucose-6-Phosphate Dehydrogenase

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ABSTRAK (ENGLISH)

Objective

To quantitate the microparticles (MPs) in whole blood and blood products obtained from blood donors who are deficient in glucose-6-phosphate dehydrogenase (G6PD).

Methods

The current study analyzed whole blood and blood components prepared from 49 blood donors with G6PD deficiencies and 98 with G6PD-normal results. Packed red blood cells (PRBCs), platelet concentrate (PC), and plasma were prepared according to transfusion laboratory procedures. MP concentrations were determined using a flow cytometer.

Results

Blood components prepared from donors with G6PD deficiency were characterized by higher red blood cell-derived MP (RMP) concentration in PRBCs (25,526 vs 18,738 particles/μL) but lower concentrations of platelet-derived MPs (PMPs; in whole blood and PC), leukocyte-derived MPs (LMP; in whole blood and plasma) and total MP (in PC), compared with those from donors with G6PD-normal test results.

Conclusions

These results suggest that differences in G6PD status may account for variation in RMP levels during processing.

Dokumen 6 dari 16

Using the BDFX40 Automated Continuous Blood Culture System to Isolate and Recover Streptobacillus moniliformis in the Presence of 0.05% SPS: A 55-Year, 56-Strain Retrospective Study

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Link dokumen ProQuest

ABSTRAK (ENGLISH)

Rat bite fever and Haverhill fever are often difficult to diagnose in a clinical setting. This difficulty results in part from clinicians and laboratory professionals not being able to reliably recover the causative agent *Streptobacillus moniliformis* using culture-based methods. After utilizing an automated continuous-monitoring blood culture bottle system, we showed that the organism can be reliably cultured when a blood volume inoculum of 10 mL is used. Further, we showed that when the above recommendation is followed, sodium polyanethole sulfonate (up to a concentration of 0.05% w/v) in commercially purchased blood culture bottle formulations seems to be inactivated, allowing for the growth and detection of *S. moniliformis*. Herein, we offer data and methods used to overcome these clinical limitations. This is a comprehensive study of the historical collection of *S. moniliformis* isolates maintained by our facility and believed to be the largest of its kind to date.

Dokumen 7 dari 16

D-Dimer Combined With CRP Can Improve the Differential Value of Bacterial Meningitis and Tuberculous Meningitis

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Link dokumen ProQuest

ABSTRAK (ENGLISH)

Objective

To explore the diagnostic value of the coagulation marker D-dimer and its combination with the traditional marker C-reactive protein (CRP) in distinguishing bacterial meningitis (BM) from tuberculous meningitis (TM).

Methods

We performed a retrospective study on specimens from 173 patients with meningitis who were hospitalized at the First Affiliated Hospital of Guangxi Medical University, Guangxi, China, from 2012 through 2020. The patient records were divided into the BM group and the TM group, and hematological parameters D-dimer and CRP were evaluated for the 2 groups.

Results

The levels of D-dimer and CRP in the BM group were significantly higher than those levels in the TM group (P < .001 for each), and the sensitivity and specificity of the combined detection of the 2 markers was 86.3% to 100%; the area under the receiver operating characteristic (ROC) curve reached 0.983 (95% confidence interval [CI], 0.966–0.999).

Conclusion

D-dimer testing has high specificity in distinguishing between BM and TM; CRP testing also has high sensitivity. The combined diagnosis of the 2 biomarkers helps to distinguish TM from BM.

Comparative Evaluation of the Modified Carbapenem Inactivation Method for Phenotypic Detection of Guiana Extended-Spectrum β-Lactamase-Type Carbapenemases in Enterobacterales

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Link dokumen ProQuest

ABSTRAK (ENGLISH)

Objective

We comparatively evaluated the performance of 3 phenotypic tests for the detection of carbapenemase production.

Materials and Methods

Carbapenemase production was evaluated using the modified Hodge test (MHT), the modified carbapenemase inhibition method (mCIM), and the Rapidec Carba NP test (RCNP).

Results

Among the 170 isolates, 79 were CP-CRE and 91 were non-CP-CRE. The CP-CRE isolates produced GES-5 (n = 66), KPC (n = 4), NDM (n = 7), NDM and OXA-48 (n = 1), and VIM (n = 1). For KPC producers, all 3 methods showed a sensitivity of 75%. The sensitivities of MHT, mCIM, and RCNP were 14.3%, 100%, and 71.4%, respectively, for NDM producers, and 1.5%, 12.1%, and 18.2% for GES-5 producers, respectively.

Conclusion

The performance of the phenotypic tests varied depending on the type of carbapenemase. For intensive infection control, phenotypic and molecular tests are required for the detection of common and rare types of carbapenemases.

Is Serum-Ascites Vitamin D Gradient a Valid Marker for Diagnosing Spontaneous Bacterial Peritonitis in Patients with Cirrhotic Ascites?

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ABSTRAK (ENGLISH)

Objective

Spontaneous bacterial peritonitis (SBP) is considered the paradigmatic model of infection in patients with liver cirrhosis. Therefore, there is a need for an accurate and rapid method for SBP diagnosis. The aim of this study was to evaluate the validity of serum-ascites 25-hydroxyvitamin D (25-OH vitamin D) gradient (SADG) as a marker for diagnosing SBP in patients with cirrhotic ascites.

Methods

We conducted a cross-sectional analytic study of 88 patients with portal hypertensive ascites resulting from liver cirrhosis of any etiology. The demographic, clinical, and laboratory characteristics of the patients were recorded. The level of 25-OH vitamin D in serum and ascitic fluid was measured using high-performance liquid chromatography autoanalyzer. The SADG was calculated with the formula: 25-OH vitamin D in serum − 25-OH vitamin D in ascites.

Results

Vitamin D deficiency was detected in 89.8% of the studied patients. The SADG values ranged between 0 and 69.2 ng/mL, with a median value of 5.58 ng/mL. It was significantly lower in patients with SBP than in those without SBP (*P* = .004). The area under the curve for SADG in exclusion of SBP was 0.67 at a cutoff value of ≥5.57 ng/mL.

Conclusion

We found that SADG may be a valid marker of SBP in patients with cirrhotic ascites.

Dokumen 10 dari 16

The Impact of COVID-19 Containment Actions on Extra-Analytical Phases of the Clinical Laboratory: A Case Report

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ABSTRAK (ENGLISH)

Laboratory information systems need to adapt to new demands created by the COVID-19 pandemic, which has set up new normals like containment measures and social distancing. Some of these have negatively impacted the pre- and postanalytical phases of laboratory testing. Here, we present an intriguing finding related to the generation of the accession number/specimen number on the investigation module of a hospital management information system and its impact on the dissemination of reports resulting in the wrong release of reports on a female patient amidst the background of COVID-19 containment measures. We analyze the situation that led to this false reporting and the importance of the proper customization of information software in laboratories along with a robust postanalytical framework of laboratory work culture to avert such untoward incidents. This introspection has made us realize that COVID-19 has been a scientific, medical, and social challenge. We need to redefine our priorities in the days to come because SARS-CoV-2 is here to stay.

Dokumen 11 dari 16

Pancreatic Cancer Insights: Optimization of the Diagnostic Capacity of Tumor Biomarkers

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ABSTRAK (ENGLISH)

Objective

Pancreatic cancer (PC) is one of the deadliest malignancies. The aim of this study was to determine the usefulness of the carbohydrate antigen 19.9 (CA19.9)/ carcinoembryonic antigen (CEA) ratio as a diagnostic tool.

Methods

This was a retrospective observational study (2015–2019), including laboratory requests with increased CA19.9 and CEA but no previous neoplasia. Receiver operating characteristic (ROC) curve analyses were performed for the CA19.9/CEA ratio and for CA19.9 and CEA alone for the detection of PC, and cutoff values for all strategies were selected separately and in combination.

Results

A total of 373 individuals were included. The area under the curve (AUC) for CA19.9/CEA was 0.872, whereas the AUC for CA19.9 was 0.847 and for CEA was 0.554. Cutoff values with the greatest diagnostic power were CA19.9/CEA >40, CA19.9 >1130 U/mL, and CEA >14.5 U/mL. The combination of CA19.9/CEA >40 with CA19.9 >550 U/mL maximized the diagnostic accuracy for PC.

Conclusion

Our results highlight the relevance of the measurement of serum CA19.9 and CEA in the detection of PC.

Dokumen 12 dari 16

Association of SLC22A1 , SLCO1B3 Drug Transporter Polymorphisms and Smoking with Disease Risk and Cytogenetic Response to Imatinib in Patients with Chronic Myeloid Leukemia

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Link dokumen ProQuest

ABSTRAK (ENGLISH)

Objective

To determine whether polymorphisms of *SLC22A1* and *SLCO1B3* genes could predict imatinib (IM) response and chronic myeloid leukemia (CML) risk.

Methods

We genotyped *SLC22A1 (c.480G >C, c.1222A >G)* and *SLCO1B3 (c.334T >G, c.699G >A)* polymorphisms in 132 patients with CML and 109 sex- and age-matched healthy subjects. The patients were evaluated for cytogenetic response by standard chromosome banding analysis (CBA).

Results

Polymorphism analysis showed significant increased risk of IM resistance for *SLC22A1c.1222AG* (*P* = .03; OR = 2.2), *SLCO1B3c.334TT/TG* genotypes (*P* = .007; OR = 4.37) and 334T allele (*P* = .03; OR = 2.86). The double combinations of *SLC22A1c.480CC* and *c.1222AG* polymorphisms with *SLCO1B3c.334TT/TG* were significantly associated with complete cytogenetic response (CCyR) (*P* <.05; OR> 7). The interaction between all polymorphisms and smoking were associated with CML development and IM resistance (*P* ≤.04; OR> 3).

Conclusions

Our study results suggest the influence of *SLC22A1* and *SLCO1B3* polymorphisms and the interaction of smoking on CML development and IM response.

Dokumen 13 dari 16

Whole-Exome Sequencing Reveals a Novel Mutation of FLNA Gene in an Iranian Family with Nonsyndromic Tetralogy of Fallot

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Link dokumen ProQuest

ABSTRAK (ENGLISH)

Objective

Tetralogy of Fallot (TOF) is one of the most common congenital abnormalities that need early intervention. Here, for the first time, we report a nonsyndromic form of TOF caused by a novel variant in the *FLNA* gene in 2 siblings of an Iranian family.

Methods

The family underwent a complete workup, including karyotyping, sequencing of 6 common genes in congenital heart diseases (*GATA4, NKX2-5, ZIC3, FOXH1, NODAL,* and *GJA1*), array comparative genomic hybridization, multiplex ligation-dependent probe amplification, and whole-exome sequencing. Segregation and in silico analysis were also conducted for the identified variant.

Results

A variant, c.3415C>T, in the *FLNA* gene was found in both affected brothers in this family; this variant was heterozygous in their mother. Bioinformatics tools predicted the variant as a pathogenic one.

Conclusion

Many allelic disorders have been reported for *FLNA* mutations. Mutations in this gene may cause a nonsyndromic congenital form of TOF.

Evaluation of Polarized Light and Fluorescence Microscopy of Congo Red Stain in the Diagnosis of Renal Amyloidosis

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ABSTRAK (ENGLISH)

Background

Amyloidosis is a devastating multisystemic disease resulting from organ deposition of misfolded proteins and subsequent organ dysfunction. An accurate diagnosis relies frequently on biopsies and microscopy techniques to detect amyloid deposition. We evaluated the diagnostic performance of Congo red staining using polarized light (PM) and fluorescence microscopy (FM) techniques in renal amyloidosis.

Methods

We performed a retrospective and prospective analysis of all renal biopsies submitted at a large quarternary hospital in Sydney, Australia, that had undergone PM and FM evaluation using Congo red staining. Identification of amyloid fibrils on electron microscopy was considered the reference method.

Results

PM and FM displayed very high sensitivity and specificity in correctly identifying amyloid deposits in renal biopsies that tested positive via Congo red staining. Comparison of the diagnostic statistics revealed that they are diagnostically equivalent.

Conclusion

In the diagnosis of renal amyloidosis on biopsy, evaluation of Congo red staining may be reliably performed via PM or FM.

MALDI-TOF-MS Analysis in the Discovery and Identification of the Serum Peptide Pattern of Pancreatic Ductal Adenocarcinoma

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ABSTRAK (ENGLISH)

Objective

To explore the application of serum peptidomics in the early diagnosis of pancreatic ductal adenocarcinoma (PDAC).

Methods

The serum specimens from 176 patients with PDAC and 158 healthy control patients were subjected to matrix-assisted laser desorption ionization time-of-flight mass spectrometry to obtain serum peptide profiles. Next, a classification model by differentiated peptides was established and verified to distinguish the 2 groups. Finally, the peptides were identified by tandem mass spectrometry.

Results

A classification model was established by 13 peptides. For patients with PDAC in the early stage, the sensitivity and specificity of the model reached 100% and 96.7%, respectively. The amino acid sequences of the 13 peptides were

then determined and the types of proteins were identified, including platelet basic protein, fibrinogen alpha, complement C3, and secreted frizzled-related protein 4. Some of the 13 peptides could be potential PDAC biomarkers.

Conclusion

Serum peptidomics may have potential application in the early diagnosis of PDAC.

Dokumen 16 dari 16

Performance Evaluation of the Siemens SARS-CoV-2 Total Antibody and IgG Antibody Test

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ABSTRAK (ENGLISH)

Objective

In this study, the performance of 2 commercially available SARS-CoV-2 antibody assays is evaluated.

Methods

The Siemens SARS-CoV-2 Total (COV2T) and IgG (COV2G) antibody tests were evaluated on a Siemens Atellica IM1300 analyzer. Imprecision was assessed with the CLSI EP15 protocol using positive controls. Ninety control group specimens were analyzed for specificity, and 175 specimens from 58 patients with polymerase chain reaction–confirmed SARS-CoV-2 were measured for the sensitivity and kinetics of the antibody response.

Results

Within-run and total imprecision were acceptable for both assays. Both tests showed a specificity of 100%. Sensitivity earlier in the disease state was greater for the COV2T assay than for the COV2G assay, but sensitivity >14 days after onset of symptoms approached 100% for both. For all patients, antibody titers remained above the seroconversion cutoff for all follow-up specimens.

Conclusion

This study shows acceptable performance for both the Siemens COV2T and COV2G test, although seroconversion occurs earlier with the COV2T test.

Daftar Pustaka

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Mongelli, F., Giuseppe, M. D., Porcellini, I., Proietti, F., Cristaudi, A., Pini, R., & Regina, D. L. (2021). Liver blood tests in the management of suspected choledocholithiasis. Labmedicine, 52(6), 597-602. doi:https://doi.org/10.1093/labmed/lmab042

Objective The likelihood of common bile duct (CBD) stones considers liver blood tests (LBTs) if they are markedly altered only. The aim of our study was to find a reliable tool based on LBTs to predict the presence of CBD stones. Methods We retrospectively considered all patients who underwent magnetic resonance cholangiopancreatography (MRCP) because of suspected CBD stones from January 2014 to June 2019. Demographic, clinical data, and LBT values were collected and analyzed. Results We selected 191 patients, 64 (33.5%) with positive MRCP and 127 (66.5%) with negative MRCP. The analysis showed that our compound LBT-based score had 83.6%, 90.7%, and 90.6% sensitivity, specificity, and negative predictive values, respectively, in determining MRCP results. Conclusion We designed a weighted score with high diagnostic power in determining MRCP results that could help in differentiating between candidates for primary cholecystectomy and patients who benefit from preoperative MRCP.

Bakht, A., Turner, B., Warren, C. S., Simmons, J. H., & Fadeyi, E. A. (2021). Anti-S antibody: A rare cause of fetal hydrops in a previously sensitized mother. Labmedicine, 52(6), 609-613. doi:https://doi.org/10.1093/labmed/lmab014

Anti-S is an IgG antibody and a rare cause of hemolytic disease of the fetus and newborn. A 38 year old woman with blood group O Rh-positive presented to the hospital at 30 weeks gestation. Her past medical history was significant for sickle cell disease and alloantibodies against the Fya, Jkb, and S antigens. Obstetric ultrasound showed the fetus to have developed scalp edema, cardiomegaly, small pericardial effusion, and large ascites. Periumbilical blood sampling results showed the fetus blood type as blood group O Rh-positive with anti-S and hemoglobin of 2 gm/dL. After multiple intrauterine transfusions of red blood cells, the fetal hemoglobin increased to 12.9 g/dL. Anti-S can cause fetal hydrops, although it is rare. All pregnant women with anti-S should be closely monitored and treated during pregnancy for the possibility of developing a severe hemolytic disease of the fetus and newborn.

Xie, W., Lin, J., Xue, N., Teng, J., Wang, Y., Yang, L., . . . Fang, Y. (2021). Relationship between gene polymorphism of methylenetetrahydrofolate reductase C677T and left ventricular hypertrophy in chinese patients with chronic kidney disease. Labmedicine, 52(6), 519-527. doi:https://doi.org/10.1093/labmed/lmab004

Objective This study aimed to investigate the relationship between the gene polymorphism of methylenetetrahydrofolate reductase (MTHFR) C677T and left ventricular hypertrophy (LVH) in patients with chronic kidney disease (CKD). Methods A total of 763 Chinese patients with CKD undergoing genetic testing were included in the study. The association between the gene polymorphism of MTHFR C677T and echocardiographic parameters was analyzed through univariate and multivariate analyses. Results We found a remarkably positive association between MTHFR C677T gene polymorphism and LVH indexes, including interventricular septal thickness (F = 3.8; P = .022), left ventricular posterior wall thickness (F = 3.0; P = .052), left ventricular mass (F = 3.9; P = .022), and left ventricular mass index (F = 2.6; P = .075). After adjusting for the potential confounders linking the polymorphism,we found that the positive association between the polymorphism and LVH indexes still existed in patients with CKD in some multiple linear regression models (P <.05). Conclusion MTHFR C677T gene polymorphism may be a genetic susceptibility marker for the development of LVH in patients with CKD.

Thakur, P., Saxena, S., Manchanda, V., Rana, N., Goel, R., & Arora, R. (2021). Utility of antigen-based rapid diagnostic test for detection of SARS-CoV-2 virus in routine hospital settings. Labmedicine, 52(6), e154-e158. doi:https://doi.org/10.1093/labmed/lmab033

Objective This study aims to evaluate the performance of an antigen-based rapid diagnostic test (RDT) for the detection of the SARS-CoV-2 virus. Methods A cross-sectional study was conducted on 677 patients. Two nasopharyngeal swabs and 1 oropharyngeal swab were collected from patients. The RDT was performed onsite by a commercially available immune-chromatographic assay on the nasopharyngeal swab. The nasopharyngeal and

oropharyngeal swabs were examined for SARS-CoV-2 RNA by real-time reverse-transcription quantitative polymerase chain reaction (RT-qPCR) assay. Results The overall sensitivity of the SARS-CoV-2 RDT was 34.5% and the specificity was 99.8%. The positive predictive value and negative predictive value of the test were 96.6% and 91.5%, respectively. The detection rate of RDT in RT-qPCR positive results was high (45%) for cycle threshold values <25. Conclusion The utility of RDT is in diagnosing symptomatic patients and may not be particularly suited as a screening tool for patients with low viral load. The low sensitivity of RDT does not qualify its use as a single test in patients who test negative; RT-qPCR continues to be the gold standard test.

Noulsri, E., Lerdwana, S., Palasuwan, D., & Palasuwan, A. (2021). Cell-derived microparticles in blood products from blood donors deficient in glucose-6-phosphate dehydrogenase. Labmedicine, 52(6), 528-535. doi:https://doi.org/10.1093/labmed/lmab007

Objective To quantitate the microparticles (MPs) in whole blood and blood products obtained from blood donors who are deficient in glucose-6-phosphate dehydrogenase (G6PD). Methods The current study analyzed whole blood and blood components prepared from 49 blood donors with G6PD deficiencies and 98 with G6PD-normal results. Packed red blood cells (PRBCs), platelet concentrate (PC), and plasma were prepared according to transfusion laboratory procedures. MP concentrations were determined using a flow cytometer. Results Blood components prepared from donors with G6PD deficiency were characterized by higher red blood cell-derived MP (RMP) concentration in PRBCs (25,526 vs 18,738 particles/μL) but lower concentrations of platelet-derived MPs (PMPs; in whole blood and PC), leukocyte-derived MPs (LMP; in whole blood and plasma) and total MP (in PC), compared with those from donors with G6PD-normal test results. Conclusions These results suggest that differences in G6PD status may account for variation in RMP levels during processing.

Szewc, A. M., Bell, M. E., Kelly, A. J., Humrighouse, B. W., & McQuiston, J. R. (2021). Using the BDFX40 automated continuous blood culture system to isolate and recover streptobacillus moniliformis in the presence of 0.05% SPS: A 55-year, 56-strain retrospective study. Labmedicine, 52(6), 536-549. doi:https://doi.org/10.1093/labmed/lmab009

Rat bite fever and Haverhill fever are often difficult to diagnose in a clinical setting. This difficulty results in part from clinicians and laboratory professionals not being able to reliably recover the causative agent Streptobacillus moniliformis using culture-based methods. After utilizing an automated continuous-monitoring blood culture bottle system, we showed that the organism can be reliably cultured when a blood volume inoculum of 10 mL is used. Further, we showed that when the above recommendation is followed, sodium polyanethole sulfonate (up to a concentration of 0.05% w/v) in commercially purchased blood culture bottle formulations seems to be inactivated, allowing for the growth and detection of S. moniliformis. Herein, we offer data and methods used to overcome these clinical limitations. This is a comprehensive study of the historical collection of S. moniliformis isolates maintained by our facility and believed to be the largest of its kind to date.

Lu, L., Qi, Y., Chen, H., Hu, Z., Yang, S., Qin, S., . . . Qin, X. (2021). D-dimer combined with CRP can improve the differential value of bacterial meningitis and tuberculous meningitis. Labmedicine, 52(6), 603-608. doi:https://doi.org/10.1093/labmed/lmab005

Objective To explore the diagnostic value of the coagulation marker D-dimer and its combination with the traditional marker C-reactive protein (CRP) in distinguishing bacterial meningitis (BM) from tuberculous meningitis (TM). Methods We performed a retrospective study on specimens from 173 patients with meningitis who were hospitalized at the First Affiliated Hospital of Guangxi Medical University, Guangxi, China, from 2012 through 2020. The patient records were divided into the BM group and the TM group, and hematological parameters D-dimer and CRP were evaluated for the 2 groups. Results The levels of D-dimer and CRP in the BM group were significantly higher than those levels in the TM group (P ˂.001 for each), and the sensitivity and specificity of the combined detection of the 2 markers was 86.3% to 100%; the area under the receiver operating characteristic (ROC) curve reached 0.983 (95% confidence interval CI], 0.966–0.999). Conclusion D-dimer testing has high specificity in distinguishing between BM and TM; CRP testing also has high sensitivity. The combined diagnosis of the 2 biomarkers helps to distinguish TM

from BM.

A-Jin, L., & Suh, H. S. (2021). Comparative evaluation of the modified carbapenem inactivation method for phenotypic detection of guiana extended-spectrum β-lactamase-type carbapenemases in enterobacterales. Labmedicine, 52(6), 578-583. doi:https://doi.org/10.1093/labmed/lmab026

Objective We comparatively evaluated the performance of 3 phenotypic tests for the detection of carbapenemase production. Materials and Methods Carbapenemase production was evaluated using the modified Hodge test (MHT), the modified carbapenemase inhibition method (mCIM), and the Rapidec Carba NP test (RCNP). Results Among the 170 isolates, 79 were CP-CRE and 91 were non-CP-CRE. The CP-CRE isolates produced GES-5 (n = 66), KPC (n = 4), NDM (n = 7), NDM and OXA-48 (n = 1), and VIM (n = 1). For KPC producers, all 3 methods showed a sensitivity of 75%. The sensitivities of MHT, mCIM, and RCNP were 14.3%, 100%, and 71.4%, respectively, for NDM producers, and 1.5%, 12.1%, and 18.2% for GES-5 producers, respectively. Conclusion The performance of the phenotypic tests varied depending on the type of carbapenemase. For intensive infection control, phenotypic and molecular tests are required for the detection of common and rare types of carbapenemases.