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Association of Plasma Fibrinogen Levels on Postoperative Day 1 with 2-Year Survival of Orthotopic Liver Transplantation for HBV-Related HCC

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ABSTRAK (ENGLISH)

Objective

To clarify the prognostic values of hemostatic parameters to predict the survival of patients undergoing orthotopic liver transplantation (OLT) for hepatitis B virus (HBV)-related hepatocellular carcinoma (HCC).

Methods

The data of 182 consecutive adult patients who underwent OLT for HBV-related HCC were subjected to univariate and multivariate analyses.

Results

Ascites and fibrinogen levels on postoperative day (POD) 1 were independent predictors of postoperative 2-year mortality (both $P < .05$). Kaplan-Meier survival analysis showed that the higher the fibrinogen level on POD 1, the better the 1- and 2-year survival of patients with ascites ($P < .05$), whereas the fibrinogen level on POD 1 was associated with 1-year ($P < .05$) but not 2-year survival of patients without ascites.

Conclusion

Fibrinogen on POD 1 is a predictor of 2-year post-OLT survival of patients with HBV-related HCC with ascites.

Myeloid Sarcoma Expressing Keratins and Mimicking Carcinoma—Case Report and Literature Review

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ABSTRAK (ENGLISH)

Unusual presentations of otherwise common hematopoietic neoplasms are a well-recognized diagnostic challenge. Herein, we present a case study of a previously healthy 64 year old woman with myeloid sarcoma whose diagnosis was delayed by an unusual immunohistochemical staining pattern, including cytokeratin expression, by the neoplastic cells and by possible anchoring bias introduced by radiographic and flow cytometric immunophenotyping reports. This case study emphasizes the need to integrate clinical, radiographic, histologic, and immunophenotyping data for rapid and accurate tissue diagnoses while being wary of the lack of specificity for many common immunophenotypic markers.

Dokumen 3 dari 20

Mycobacterium mucogenicum Infection in a Patient with an Open Fracture: A Case Report

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ABSTRAK (ENGLISH)

Mycobacterium mucogenicum is a nontuberculous mycobacterium that is ubiquitous in nature. However, *M. mucogenicum* infection in patients with orthopedic trauma is rarely reported in the literature. Herein, we describe a 48 year old male Han Chinese patient whose right leg was squeezed by agricultural machinery, resulting in open tibial fractures. Postoperative antimicrobial treatment was administered because the wound had been contaminated by soil. However, no long-term wound closure occurred, and a culture of the wound exudation tested positive for *M. mucogenicum*. We established the clinical treatment plan according to the characteristics and drug sensitivity test results of *M. mucogenicum*, and the patient was discharged uneventfully. Increasingly, more reports of infection caused by nontuberculous mycobacteria are being published; however, to our knowledge, this is the first report of an orthopedic infection caused by *M. mucogenicum*. Because the treatment process of *M. mucogenicum* infection is long and complex, isolation and identification of *M. mucogenicum* are of great significance to effective clinical treatment.

Dokumen 4 dari 20

To Reflex or Not to Reflex: A Time and Cost-Effectiveness Analysis of Autocontrol with Reflex DAT versus Direct DAT

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ABSTRAK (ENGLISH)

Objective

Performing autocontrol with a reflex direct antiglobulin test (DAT) or directly performing IgG DAT only for alloantibody detection has been a matter of institutional preference. The aim of this study is to evaluate antibody identification (ABID), local cost, and staff time savings of both processes.

Methods

We retrospectively reviewed all positive indirect antiglobulin tests with corresponding ABID, DAT, autocontrol, and patients with newly identified antibodies in 2014 and 2016. The number of tests performed, ABID, and the cost differences between methods were compared. Cost analysis was estimated from direct material costs, labor costs, and time spent per ABID workup.

Results

Annual costs and time saved by performing direct IgG DAT only were \$8460 and 180 hours, respectively. The percentage of new ABID in 2014 and 2016 was identical (3.3%).

Conclusion

Removing autocontrol with reflex DATs at our center reduced costs and staff time while maintaining a comparable rate of positivity of ABID.

Dokumen 5 dari 20

MiR-150 Expression in Chronic Myeloid Leukemia: Relation to Imatinib Response

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ABSTRAK (ENGLISH)

Objective

To assess the circulating micro-RNA-150 (miR-150) expression in patients with chronic myeloid leukemia (CML) in relation to imatinib response.

Methods

Sixty patients with CML and 20 age- and sex-matched control subjects were enrolled. Circulating miR-150 levels were assessed by quantitative real-time polymerase chain reaction on days 0, 14, and 90 of imatinib therapy for patients and once for control subjects.

Results

The baseline miR-150 expression was significantly lower in patients with CML than in control subjects with subsequent elevation at 14 and 90 days after the start of imatinib treatment. Early treatment response (ETR) at 90 days was the main study outcome. The miR-150 expression had a significantly higher level in patients with CML with ETR. On multivariate analysis, miR-150 on day 14 was significantly related to ETR in patients with CML with predictive efficacy (area under the curve = 0.838, 72.9% sensitivity, and 84.2% specificity).

Conclusion

We found that miR-150 expression on day 14 of imatinib treatment is a useful early predictive candidate for imatinib response in patients with CML.

Dokumen 6 dari 20

Variant Acute Promyelocytic Leukemia Presenting Without Auer Rods Highlights the Need for Correlation with Cytogenetic Data in Leukemia Diagnosis

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ABSTRAK (ENGLISH)

Variant acute promyelocytic leukemia (vAPL) is a rare leukemia characterized by rearrangement between *RAR α* and a non-*PML* partner gene. This type of leukemia can be difficult to recognize by histomorphologic evaluation, particularly in patients with few or no Auer rods, and by flow cytometry, but it can be identified by distinct cytogenetic features. Herein, we report on a patient with vAPL with t(11;17)(q23;q21) who presented an initial diagnostic challenge. Detailed flow cytometry findings are presented for this rare entity. Our case study also presents novel treatment (chemotherapy in combination with venetoclax) chosen based on mechanistic data from preclinical studies.

Dokumen 7 dari 20

A Persistent Positive Antibody Test in a Patient with No History of COVID-19 Infection

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ABSTRAK (ENGLISH)

Antibody testing for SARS-CoV-2 has been established as a tool with broad utility in the surveillance and control of the COVID-19 pandemic. However, because of limited knowledge about the duration of humoral immunity to COVID-19 and the existence of unique individual immune responses, the potential role of antibody testing in the diagnosis of current and past infections of COVID-19 remains ambiguous. Herein, we describe a unique case of an asymptomatic patient showing a persistent positive total antibody test for SARS-CoV-2 while testing negative for SARS-CoV-2 RNA and IgG-specific antibodies. This case study shows how a combination of tests can be employed to identify a false positive and draw conclusions about a patient's COVID-19 status. It also highlights the complexity of using antibody testing for the diagnosis of COVID-19.

Dokumen 8 dari 20

Association Between Graft Function and Urine CXCL10 and Acylcarnitines Levels in Kidney Transplant Recipients

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ABSTRAK (ENGLISH)

Objective

To evaluate post-transplantation graft functions noninvasively by using urine C-X-C motif chemokine 10 (CXCL10) and metabolome analysis.

Methods

The 65 living-donor kidney-transplant recipients in our cohort underwent renal biopsy to investigate possible graft dysfunction. The patients were divided into 2 groups, according to pathology reports: chronic allograft dysfunction (CAD; $n = 18$) and antibody-mediated/humoral allograft rejection (AMR; $n = 16$). The control group was composed of renal transplant recipients with stable health ($n = 33$). We performed serum creatinine, blood urea nitrogen (BUN), cystatin C, urine protein, CXCL10, and metabolome analyses on specimens from the patients.

Results

BUN, creatinine, cystatin C, urine protein, leucine + isoleucine, citrulline, and free/acetyl/propionyl carnitine levels were significantly higher in patients with CAD and AMR, compared with the control individuals. CXCL10 levels were significantly elevated in patients with AMR, compared with patients with CAD and controls. CXCL10 (AUC = 0.771) and cystatin C (AUC = 0.746) were significantly higher in the AMR group, compared with the CAD group ($P < .02$).

Conclusions

CXCL10 and metabolome analyzes are useful for evaluation of graft functions. Also, CXCL10 might be useful as a supplementary noninvasive screening test for diagnosis of allograft rejection.

Dokumen 9 dari 20

Application of QuantiFERON ELISA for Detection of Interferon-Gamma Autoantibodies in Adult-Onset Immunodeficiency Syndrome

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ABSTRAK (ENGLISH)

Objective

Patients who develop interferon-gamma autoantibodies (IFN- γ autoAbs) in adult-onset immunodeficiency (AOID) syndrome are more likely to develop opportunistic and recurrent intracellular infections. The assay to detect IFN- γ autoAbs is essential for the diagnosis and therapeutic monitoring of AOID syndrome. Therefore, this study applied the QuantiFERON assay for the detection of IFN- γ autoAbs.

Methods

Serum from patients with AOID syndrome (n = 19) and serum from healthy patients (n = 20) was collected and applied using 2 neutralizing platforms of enzyme-linked immunosorbent assay (ELISA) kits (the BD ELISA and the QuantiFERON ELISA) for IFN- γ autoAbs detection.

Results

The pooled serum from patients with AOID syndrome showed >50% inhibition at 1:5000 dilution (positive), whereas the pooled serum from healthy patients showed <50% inhibition at 1:5000 dilution (negative) according to the neutralizing QuantiFERON ELISA. Each specimen showed the same result according to both the neutralizing BD ELISA and the neutralizing QuantiFERON ELISA. Moreover, the patient serum showed a variation in titer ranging from 1:5000 to >1:5,000,000 according to the neutralizing QuantiFERON ELISA.

Conclusion

The QuantiFERON ELISA kit could be applied for the detection of IFN- γ autoAbs for the diagnosis and therapeutic monitoring of AOID syndrome.

Dokumen 10 dari 20

Identifying Glucocorticoid Insufficiency in Silent Corticotroph Adenoma with Elevated Adrenocorticotrophic Hormone

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ABSTRAK (ENGLISH)

Silent corticotroph adenoma (SCA) is as an aggressive pituitary tumor. A 48 year old man developed hypogonadotrophic hypogonadism. The basal morning adrenocorticotrophic hormone (ACTH) was elevated, but the basal morning and peak after ACTH (1–24) stimulation cortisol were normal. A 3.7 cm sellar mass with evidence of

internal hemorrhage, encasement of the right internal carotid artery, and invasion of the right cavernous sinus were identified, resected, and stained positive for ACTH. Over the next 5 years, the basal morning ACTH and cortisol were normal, and imaging revealed the presence of a small residual tumor. One year later, the patient became fatigued and nauseated, with elevated ACTH. An overnight metyrapone stimulation test (OMST) revealed glucocorticoid insufficiency, without further increase in ACTH. Symptoms resolved with hydrocortisone treatment. This case study suggests that SCA can secrete an ACTH precursor that is detected by clinical assays but is not active biologically. Postoperative OMST reveals glucocorticoid insufficiency in this context.

Dokumen 11 dari 20

Tracking Antimicrobial Resistance in *Neisseria gonorrhoeae* from the Molecular Level Using Endocervical Swabs

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ABSTRAK (ENGLISH)

Objective

The global emergence of drug resistance in *Neisseria gonorrhoeae* has resulted in the use of a range of antibiotics and is now a public health concern because this pathogen may become untreatable in the future. This study aimed to detect antimicrobial-resistant determinants in *N. gonorrhoeae* directly from endocervical specimens.

Methods

Three hundred seven pregnant women were enrolled in this study. Endocervical swabs were collected from consenting women and used for the detection of *N. gonorrhoeae*. Molecular indicators associated with penicillin, tetracycline, ciprofloxacin, azithromycin, spectinomycin, cefixime, and ceftriaxone resistance were detected by polymerase chain reaction.

Results

Of the 307 women, 24 (7.8%) tested positive for *N. gonorrhoeae*. The *tetM* gene carried on the American-type plasmid was shown to be present in all the specimens. Approximately 87.5% of the specimens carried the penicillinase-producing African-type plasmid, and the *gyrase A* gene carrying the Ser-91 mutation was shown to be present in 37.5% of the specimens. Mutations associated with azithromycin, spectinomycin, cefixime, and ceftriaxone resistance were not detected in the study specimens.

Conclusion

The detection of resistance determinants without the need for culture may prove to be more feasible for future epidemiological investigations focused on tracking antimicrobial susceptibility patterns in *N. gonorrhoeae*.

Dokumen 12 dari 20

Diagnostic Value of Circular RNA hsa_circ_0002874 Expression in Peripheral Blood of Patients with Gastric Cancer

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ABSTRAK (ENGLISH)

The purpose of this study was to determine whether circular RNA hsa_circ_0002874 could serve as a novel biomarker for the diagnosis of gastric cancer (GC). The expression level of hsa_circ_0002874 mean (interquartile range [IQR]) in the plasma of patients with GC, patients with benign gastric lesions, and healthy individuals was 3.482 (IQR, 1.524–9.048), 1.261 (IQR, 0.817–2.000), and 1.00 (IQR, 0.726–1.382), respectively, whereas there was no significant difference between the latter 2 groups. The plasma expression level of hsa_circ_0002874 was significantly correlated with tumor stage ($U = 234.0$; $P < .001$) and lymph node metastasis ($U = 240.0$; $P < .001$). The receiver operating characteristic (ROC) curve showed that the sensitivity of the combined determination of hsa_circ_0002874 and the serum markers CEA and CA19-9 was 95.8% in patients with GC compared with that of the healthy group and 93.0% compared with that of patients with benign gastric tumor lesions. The specificity of hsa_circ_0002874 in differentiating GC from benign lesions was 98.3%. The results showed that plasma hsa_circ_0002874 may prove to be a useful biomarker for auxiliary diagnosis, the grading of malignant neoplasms, and the prognostic prediction of GC.

Dokumen 13 dari 20

A Fluorescence-Based Quantitative Analysis for Total Bilirubin in Blood and Urine

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ABSTRAK (ENGLISH)

Background

Bilirubin is a catabolic product of heme metabolism that circulates in the bloodstream in its unconjugated or glucuronide-conjugated form. Because the accumulation of bilirubin in the blood is a common symptom of liver diseases, its measurement in plasma (serum) is important for the diagnosis of these diseases.

Method

We developed a method to assess total bilirubin levels in serum and urine, using the fluorescent protein UnaG and β -glucuronidase.

Results

Our results indicate good correlation in serum total bilirubin levels between UnaG and the conventional bilirubin oxidase (BOD) methods. We found low levels of conjugated and unconjugated bilirubin in the urine of healthy subject individuals. Urinary bilirubin levels were elevated in patients with liver or bile duct diseases. A simple spot test of bilirubin using serum and urine showed a strong signal in patients with liver diseases.

Conclusion

The proposed method to assess bilirubin levels in serum and urine will contribute to the accurate diagnosis of health conditions such as jaundice, anemia, and liver disease.

Dokumen 14 dari 20

Clinical Interpretation Challenges of Germline-Shared Somatic Variants in Cancer

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ABSTRAK (ENGLISH)

Objective

To investigate the interpretation differences of germline-shared somatic variants.

Methods

A total of 123,302 COSMIC variants associated with hematologic malignant neoplasms were used. The pathogenicity and actionability of shared variants were analyzed based on the standardized guidelines.

Results

The overall frequency of variants shared in ClinVar/HGMD and COSMIC was 10%. The pathogenicity of 54 shared variants was pathogenic/likely pathogenic (P/LP; $n = 30$), variants of unknown significance ($n = 3$), and benign/likely benign ($n = 21$). In total, 30 P/LP variants were reclassified to tier I/tier II (83%) and tier III (17%) variants.

Conclusions

This is the first study about different clinical interpretations of shared variants based on the current standard guidelines. This study takes a meaningful step in bridging the interpretation gap between the somatic and germline variants.

Dokumen 15 dari 20

Lean Principles to Improve Quality in High-Throughput COVID-19 Testing Using SwabSeq: A Barcoded Sequencing-Based Testing Platform

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ABSTRAK (ENGLISH)

Objective

To describe and quantify the effect of quality control (QC) metrics to increase testing efficiency in a high-complexity, Clinical Laboratory Improvement Amendments–certified laboratory that uses amplicon-based, next generation sequencing for the clinical detection of SARS-CoV-2. To enable rapid scalability to several thousands of specimens per day without fully automated platforms, we developed internal QC methods to ensure high-accuracy testing.

Methods

We implemented procedures to increase efficiency by applying the Lean Six Sigma model into our sequencing-based COVID-19 detection.

Results

The application of the Lean Six Sigma model increased laboratory efficiency by reducing errors, allowing for a higher testing volume to be met with minimal staffing. Furthermore, these improvements resulted in an improved turnaround time.

Conclusion

Lean Six Sigma model execution has increased laboratory efficiency by decreasing critical testing errors and has prepared the laboratory for future scaling up to 50,000 tests per day.

Dokumen 16 dari 20

Development of an LC-MS/MS Method for Measurement of Irinotecan and Its Major Metabolites in Plasma: Technical Considerations

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ABSTRAK (ENGLISH)

Objective

Irinotecan (CPT-11) is an important drug used in the treatment of several solid tumor types. To minimize its toxicity, therapeutic drug monitoring of CPT-11 and its major metabolites (SN-38, SN-38-glucuronide [SN-38G], and APC) has been proposed. We aimed to develop a liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for the quantification of CPT-11 and its major metabolites in plasma.

Methods

Specimen preparation consisted of protein precipitation, evaporation, and reconstitution. Analyses were performed on a C18 column using reverse-phase gradient elution. Electrospray ionization and multiple reaction monitoring in positive mode were used for MS. The following heavy isotope-labeled internal standards were used: CPT-11 D10, SN-38 D3, SN-38G D3, and APC D3.

Results

We found that CPT-11, SN-38G, and APC eluted at ~4.6 to 4.7 minutes, and SN-38 eluted at ~5.1 to 5.2 minutes. A second peak for SN-38 was detected at ~4.6 to 4.7 minutes. Given that the structure of SN-38 is found in CPT-11, SN-38G, and APC, and in the CPT-11 D10 used here, in-source fragmentation was the likely cause. In addition, we found that a low-level SN-38 impurity was present in CPT-11 D10 and to a lesser extent in SN-38 D3.

Conclusion

When developing methods for CPT-11 and its metabolites, it is important to consider the effects of in-source fragmentation and the choice of internal standards.

Dokumen 17 dari 20

Evolution and Reflection

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Dokumen 18 dari 20

LINC00205 Promotes Tumor Malignancy of Lung Adenocarcinoma Through Sponging miR-185-5p

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ABSTRAK (ENGLISH)

The emerging role of long noncoding RNAs (lncRNAs) in cancer, especially in lung adenocarcinoma (LUAD), is attracting increasingly more attention as a potential therapeutic target. However, whether lncRNA LINC00205 regulates the malignancy of LUAD has not been characterized. In this study, we discovered that LINC00205 was markedly upregulated in LUAD tissues and cell lines and correlated with poor prognosis of patients with LUAD. Our data showed that LINC00205 promoted the migration and proliferation of LUAD cells in vitro and tumor growth in vivo. Notably, the tumor suppressor miR-185-5p was found to be a direct target of LINC00205. In addition, miR-185-5p diminished the promotion of cell proliferation and migration mediated by LINC00205, whereas miR-185-5p inhibition had the opposite effect. In summary, our results show that LINC00205 contributes to LUAD malignancy by sponging miR-185-5p, which provides new insight into LUAD progression.

Dokumen 19 dari 20

Clinical Value of Pepsinogen in the Screening, Prevention, and Diagnosis of Gastric Cancer

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ABSTRAK (ENGLISH)

Objectives

To compare the levels of serum pepsinogen (PG) in patients with gastric cancer (GC), patients with atrophic gastritis (AG), and healthy donors. Also, we explored the clinical value of PG detection for the diagnosis and treatment of GC.

Methods

The PG level in peripheral blood from patients and healthy donors was determined using an Abbott automatic chemiluminescence instrument. The study included 117 patients with GC confirmed by gastroscopy and histopathology, of whom 13 patients had cancer at stage I, 47 at stage II, 41 at stage III, and 16 at stage IV. The AG

group included 122 patients, and the control group had 120 healthy donors. The relationship between serum PG levels and the occurrence and development of GC, as well as the evaluation of the clinical value of diagnostic tests based on serum PG detection, were investigated by receiver operating characteristic (ROC) curve analyses.

Results

Pepsinogen I (PGI) levels gradually decreased from the control group, the AG group, and the GC group. PGI exhibited high diagnostic value for GC (area under the curve [AUC], 0.834; cutoff, 51.2 ng/mL, sensitivity, 81.7%; specificity, 68.4%), PGII (AUC, 0.587; cutoff value, 13.05 ng/mL; sensitivity, 65.8%; specificity, 53.8%), and PGR (AUC, 0.752; cutoff, 5.65; sensitivity, 54.2%; specificity, 87.2%). The occurrence of GC was negatively correlated with serum levels of PGI ($B = -0.054$; $OR = 0.947$; 95% confidence interval [CI], 0.925–0.970; $P < .001$) and PGR ($B = -0.420$; $OR = 0.657$; 95% CI, 0.499–0.864; $P = .003$).

Conclusions

The combined detection of PGI, PGII, and PGR has important clinical value for the screening, prevention, and diagnosis of GC and could allow for earlier detection, diagnosis, and treatment of GC.

Dokumen 20 dari 20

Stat Laboratory Interventions to Improve Patient Management in the Emergency Department and Resource Expenditure: A 10-Year Study

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ABSTRAK (ENGLISH)

Objective

To illustrate the changes in stat laboratory procedures over a 10 year period.

Materials and Methods

We implemented 5 different interventions: reporting total bilirubin through the icteric index, replacing total proteins for albumin, reporting albumin-adjusted calcium in hyper- or hypocalcemia, using lipase as a first marker and amylase-

selected scenario, and measuring magnesium in hypocalcemia, hypokalemia, or high lipase values.

Results

Only 9.9% of total bilirubin that was requested was measured, which resulted in savings of \$22,492.83. There were 30,036 albumin tests measured, and \$15,625.18 was saved replacing total protein. There was \$41,374.38 spent to measure lipase and amylase; the difference in costs from the lipase establishment was \$16,929.62. Finally, \$382.30 was spent for magnesium: 717 magnesium levels were measured given hypocalcemia or hypokalemia (42.8% hypomagnesemia), and 123 tests were added because of high lipase (35% hypomagnesemia). Overall, \$53,374.15 was saved.

Conclusion

Progressive changes in stat laboratory procedures resulted in more efficient resources expenditures.

Daftar Pustaka

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Liu, X., Guo, R., & Tian, J. (2022). Association of plasma fibrinogen levels on postoperative day 1 with 2-year survival of orthotopic liver transplantation for HBV-related HCC. *Labmedicine*, 53(1), 30-38. doi:<https://doi.org/10.1093/labmed/lmab052>

Objective To clarify the prognostic values of hemostatic parameters to predict the survival of patients undergoing orthotopic liver transplantation (OLT) for hepatitis B virus (HBV)-related hepatocellular carcinoma (HCC). **Methods** The data of 182 consecutive adult patients who underwent OLT for HBV-related HCC were subjected to univariate and multivariate analyses. **Results** Ascites and fibrinogen levels on postoperative day (POD) 1 were independent predictors of postoperative 2-year mortality (both $P < .05$). Kaplan-Meier survival analysis showed that the higher the fibrinogen level on POD 1, the better the 1- and 2-year survival of patients with ascites ($P < .05$), whereas the fibrinogen level on POD 1 was associated with 1-year ($P < .05$) but not 2-year survival of patients without ascites. **Conclusion** Fibrinogen on POD 1 is a predictor of 2-year post-OLT survival of patients with HBV-related HCC with ascites.

Dayton, V. J., Beckman, A., & Linden, M. (2022). Myeloid sarcoma expressing keratins and mimicking Carcinoma—Case report and literature review. *Labmedicine*, 53(1), 100-106. doi:<https://doi.org/10.1093/labmed/lmab025>

Unusual presentations of otherwise common hematopoietic neoplasms are a well-recognized diagnostic challenge. Herein, we present a case study of a previously healthy 64 year old woman with myeloid sarcoma whose diagnosis was delayed by an unusual immunohistochemical staining pattern, including cytokeratin expression, by the neoplastic cells and by possible anchoring bias introduced by radiographic and flow cytometric immunophenotyping reports. This case study emphasizes the need to integrate clinical, radiographic, histologic, and immunophenotyping data for rapid and accurate tissue diagnoses while being wary of the lack of specificity for many common immunophenotypic markers.

Li, W., Li, M., Liu, M., & Ma, J. (2022). Mycobacterium mucogenicum infection in a patient with an open fracture: A case report. *Labmedicine*, 53(1), e4-e7. doi:<https://doi.org/10.1093/labmed/lmab031>

Mycobacterium mucogenicum is a nontuberculous mycobacterium that is ubiquitous in nature. However, *M. mucogenicum* infection in patients with orthopedic trauma is rarely reported in the literature. Herein, we describe a 48 year old male Han Chinese patient whose right leg was squeezed by agricultural machinery, resulting in open tibial fractures. Postoperative antimicrobial treatment was administered because the wound had been contaminated by soil. However, no long-term wound closure occurred, and a culture of the wound exudation tested positive for *M. mucogenicum*. We established the clinical treatment plan according to the characteristics and drug sensitivity test results of *M. mucogenicum*, and the patient was discharged uneventfully. Increasingly, more reports of infection caused by nontuberculous mycobacteria are being published; however, to our knowledge, this is the first report of an orthopedic infection caused by *M. mucogenicum*. Because the treatment process of *M. mucogenicum* infection is long and complex, isolation and identification of *M. mucogenicum* are of great significance to effective clinical treatment.

Lollie, T., Suciu, V., Ward, D. C., Ziman, A., & McGonigle, A. M. (2022). To reflex or not to reflex: A time and cost-effectiveness analysis of autocontrol with reflex DAT versus direct DAT. *Labmedicine*, 53(1), 53-57. doi:<https://doi.org/10.1093/labmed/lmab056>

Objective Performing autocontrol with a reflex direct antiglobulin test (DAT) or directly performing IgG DAT only for alloantibody detection has been a matter of institutional preference. The aim of this study is to evaluate antibody identification (ABID), local cost, and staff time savings of both processes. **Methods** We retrospectively reviewed all positive indirect antiglobulin tests with corresponding ABID, DAT, autocontrol, and patients with newly identified antibodies in 2014 and 2016. The number of tests performed, ABID, and the cost differences between methods were

compared. Cost analysis was estimated from direct material costs, labor costs, and time spent per ABID workup. Results Annual costs and time saved by performing direct IgG DAT only were \$8460 and 180 hours, respectively. The percentage of new ABID in 2014 and 2016 was identical (3.3%). Conclusion Removing autocontrol with reflex DATs at our center reduced costs and staff time while maintaining a comparable rate of positivity of ABID.

Habib, E. M., Nosiar, N. A., Eid, M. A., Taha, A. M., Sherief, D. E., Hassan, A. E., & Abdel Ghafar, M.,T. (2022). MiR-150 expression in chronic myeloid leukemia: Relation to imatinib response. *Labmedicine*, 53(1), 58-64. doi:<https://doi.org/10.1093/labmed/lmab040>

Objective To assess the circulating micro-RNA-150 (miR-150) expression in patients with chronic myeloid leukemia (CML) in relation to imatinib response. **Methods** Sixty patients with CML and 20 age- and sex-matched control subjects were enrolled. Circulating miR-150 levels were assessed by quantitative real-time polymerase chain reaction on days 0, 14, and 90 of imatinib therapy for patients and once for control subjects. **Results** The baseline miR-150 expression was significantly lower in patients with CML than in control subjects with subsequent elevation at 14 and 90 days after the start of imatinib treatment. Early treatment response (ETR) at 90 days was the main study outcome. The miR-150 expression had a significantly higher level in patients with CML with ETR. On multivariate analysis, miR-150 on day 14 was significantly related to ETR in patients with CML with predictive efficacy (area under the curve = 0.838, 72.9% sensitivity, and 84.2% specificity). **Conclusion** We found that miR-150 expression on day 14 of imatinib treatment is a useful early predictive candidate for imatinib response in patients with CML.

Courville, E. L., Shantzer, L., Hans Christoph Vitzthum von Eckstaedt, V., Mellot, H., Keng, M., Sen, J., . . . Chaer, F. E. (2022). Variant acute promyelocytic leukemia presenting without auer rods highlights the need for correlation with cytogenetic data in leukemia diagnosis. *Labmedicine*, 53(1), 95-99. doi:<https://doi.org/10.1093/labmed/lmab051>

Variant acute promyelocytic leukemia (vAPL) is a rare leukemia characterized by rearrangement between RAR α and a non-PML partner gene. This type of leukemia can be difficult to recognize by histomorphologic evaluation, particularly in patients with few or no Auer rods, and by flow cytometry, but it can be identified by distinct cytogenetic features. Herein, we report on a patient with vAPL with t(11;17)(q23;q21) who presented an initial diagnostic challenge. Detailed flow cytometry findings are presented for this rare entity. Our case study also presents novel treatment (chemotherapy in combination with venetoclax) chosen based on mechanistic data from preclinical studies.

McMurry, J., & Fink, E. (2022). A persistent positive antibody test in a patient with no history of COVID-19 infection. *Labmedicine*, 53(1), e1-e3. doi:<https://doi.org/10.1093/labmed/lmab038>

Antibody testing for SARS-CoV-2 has been established as a tool with broad utility in the surveillance and control of the COVID-19 pandemic. However, because of limited knowledge about the duration of humoral immunity to COVID-19 and the existence of unique individual immune responses, the potential role of antibody testing in the diagnosis of current and past infections of COVID-19 remains ambiguous. Herein, we describe a unique case of an asymptomatic patient showing a persistent positive total antibody test for SARS-CoV-2 while testing negative for SARS-CoV-2 RNA and IgG-specific antibodies. This case study shows how a combination of tests can be employed to identify a false positive and draw conclusions about a patient's COVID-19 status. It also highlights the complexity of using antibody testing for the diagnosis of COVID-19.

Saniye Başak Oktay, Akbaş, S. H., Vural, T. Y., İkbāl Özen Küçükçetin, Toru, H. S., & Süleyman Gültekin Yücel. (2022). Association between graft function and urine CXCL10 and acylcarnitines levels in kidney transplant recipients. *Labmedicine*, 53(1), 78-84. doi:<https://doi.org/10.1093/labmed/lmab049>

Objective To evaluate post-transplantation graft functions noninvasively by using urine C-X-C motif chemokine 10 (CXCL10) and metabolome analysis. **Methods** The 65 living-donor kidney-transplant recipients in our cohort underwent renal biopsy to investigate possible graft dysfunction. The patients were divided into 2 groups, according to pathology reports: chronic allograft dysfunction (CAD; n = 18) and antibody-mediated/humoral allograft rejection

(AMR; n = 16). The control group was composed of renal transplant recipients with stable health (n = 33). We performed serum creatinine, blood urea nitrogen (BUN), cystatin C, urine protein, CXCL10, and metabolome analyses on specimens from the patients. Results BUN, creatinine, cystatin C, urine protein, leucine + isoleucine, citrulline, and free/acetyl/propionyl carnitine levels were significantly higher in patients with CAD and AMR, compared with the control individuals. CXCL10 levels were significantly elevated in patients with AMR, compared with patients with CAD and controls. CXCL10 (AUC = 0.771) and cystatin C (AUC = 0.746) were significantly higher in the AMR group, compared with the CAD group (P<.02). Conclusions CXCL10 and metabolome analyzes are useful for evaluation of graft functions. Also, CXCL10 might be useful as a supplementary noninvasive screening test for diagnosis of allograft rejection.

Khositnithikul, R., Laisuan, W., Setthaudom, C., Sriwanichrak, K., Kunakorn, M., Srihirin, T., . . . Vongsakulyanon, A. (2022). Application of QuantiFERON ELISA for detection of interferon-gamma autoantibodies in adult-onset immunodeficiency syndrome. *Labmedicine*, 53(1), 12-17. doi:<https://doi.org/10.1093/labmed/lmab039>

Objective Patients who develop interferon-gamma autoantibodies (IFN- γ autoAbs) in adult-onset immunodeficiency (AOID) syndrome are more likely to develop opportunistic and recurrent intracellular infections. The assay to detect IFN- γ autoAbs is essential for the diagnosis and therapeutic monitoring of AOID syndrome. Therefore, this study applied the QuantiFERON assay for the detection of IFN- γ autoAbs. Methods Serum from patients with AOID syndrome (n = 19) and serum from healthy patients (n = 20) was collected and applied using 2 neutralizing platforms of enzyme-linked immunosorbent assay (ELISA) kits (the BD ELISA and the QuantiFERON ELISA) for IFN- γ autoAbs detection. Results The pooled serum from patients with AOID syndrome showed >50% inhibition at 1:5000 dilution (positive), whereas the pooled serum from healthy patients showed 1:5,000,000 according to the neutralizing QuantiFERON ELISA. Conclusion The QuantiFERON ELISA kit could be applied for the detection of IFN- γ autoAbs for the diagnosis and therapeutic monitoring of AOID syndrome.

Schlegel, A. (2022). Identifying glucocorticoid insufficiency in silent corticotroph adenoma with elevated adrenocorticotrophic hormone. *Labmedicine*, 53(1), 91-94. doi:<https://doi.org/10.1093/labmed/lmab053>

Silent corticotroph adenoma (SCA) is as an aggressive pituitary tumor. A 48 year old man developed hypogonadotrophic hypogonadism. The basal morning adrenocorticotrophic hormone (ACTH) was elevated, but the basal morning and peak after ACTH (1–24) stimulation cortisol were normal. A 3.7 cm sellar mass with evidence of internal hemorrhage, encasement of the right internal carotid artery, and invasion of the right cavernous sinus were identified, resected, and stained positive for ACTH. Over the next 5 years, the basal morning ACTH and cortisol were normal, and imaging revealed the presence of a small residual tumor. One year later, the patient became fatigued and nauseated, with elevated ACTH. An overnight metyrapone stimulation test (OMST) revealed glucocorticoid insufficiency, without further increase in ACTH. Symptoms resolved with hydrocortisone treatment. This case study suggests that SCA can secrete an ACTH precursor that is detected by clinical assays but is not active biologically. Postoperative OMST reveals glucocorticoid insufficiency in this context.

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