with molecular confirmation of the recently identified MALAT1-GLI1 translocations only in a subset. Aspiration cytologic and small biopsy findings have not yet been reported. We present a case of gastroblastoma, arising in a 22-year-old female.
Results: A CT scan was performed, showing a 7 cm heterogeneous mass in the distal stomach and pancreas, clinically suspected to represent at gastrointestinal stromal tumor (GIST). She underwent two preoperative samples, including endoscopic ultrasound guided-fine needle aspiration and core biopsy, followed by a distal gastrectomy. Diff- Quik stained touch preparations performed on the core needle biopsy during rapid on-site evaluation showed a hypercellular neoplasm composed of large, three-dimensional aggregates of neoplastic cells in a background of numerous isolated single cells and bare nuclei. The neoplastic cells were bland with spindled to epithelioid nuclei, occasional nuclear grooves, and small nucleoli. Immunostains were only helpful in excluding GIST (CD117 and DOG1 negative). Distal gastrectomy showed a nodular/plexiform tumor with variably epithelioid to spindle cell cytology and solid to focally myxoid/microcystic architecture. Pancytokeratins CAM5.2 (patchy) and AE1/AE3 (very focal) were positive, with negative S100, SMA, Desmin, Melan-A, Inhibin, Calretinin, and Synaptophysin. Based on the age, location, histology and immunophenotype, gastroblastoma was suspected, and multiplex NGS-based fusion sequencing identified a MALAT1-GLI1 fusion. Staging studies were negative for metastasis at presentation.
Conclusion: Based on this experience, we recommend consideration of gastroblastoma for a gastric tumor in a young patient, especially if encountering a cytologic sample showing non-pleomorphic epithelioid and spindle cell cytology. Lack of expression of GIST, smooth muscle, neuroendocrine, and neural sheath-associated markers should particularly raise consideration of this rare neoplasm. While in this case molecular studies clinched the diagnosis upon resection, increasingly used GLI1 immunostain may be of use prospectively for diagnosis of limited samples.

Anaerobes Direct from Blood Culture Bottles Can Be Identified by Early Matrix-Assisted Laser Desorption Ionization/ Time-of-Flight Mass Spectrometry (MALDI-TOF MS) at 24 Hours or Less

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Introduction/Objective: Matrix-assisted laser desorption ionization/ time-of-flight mass spectrometry (MALDI-TOF MS) direct from positive blood culture bottles has facilitated drastic drops in turn-around times for microorganism identification but has been poorly studied for anaerobes. We investigated the ability of MALDI-TOF to provide early anaerobe identification at 4 hours and 18-24 hours of growth on agar from anaerobic blood culture bottles.
Additionally, we reviewed medical records of such patients to ascertain impact of early identification on antimicrobial treatment.
Methods: Over 9 months, we ran MALDI-TOF on early growth from blood cultures positive for growth in BACTEC™ Lytic/ 10 Anaerobic/F bottles. Broth from each bottle was subbed to sheep blood agar (4 hours, 5% CO2) and 2 CDC (BD-BBL™) anaerobic blood agar plates (examined 18-24 hours and 48 hours). Bruker Biotyper® RUO v7854 and Mayo Clinic Custom MALDI-TOF MS libraries were used for identification.
Results: 144/184 (78%) bottles resulted in growth of aerobic bacteria. Of the remaining bottles with growth of anaerobes, 38 were assessed by early MALDI-TOF. Early MALDI-TOF at 4 hours identified 3 Clostridium perfringens (8%) and an additional 26/38 (68%) isolates at 18-24 hours (both Gram-positive and –negative). Routine 48 hour identification was required for 9 (24%) isolates. In 7 cases, early MALDI-TOF resulted in a change to more appropriate antimicrobial therapy, most often for Bacteroides.
Conclusion: 29/38 (76%) of anaerobes from blood culture bottles were identified by early MALDI-TOF and reported to the clinician at least 24 hours before routine review of anaerobic sub plates for growth. All C. perfringens and Bacteroides were identified by 4 and 24 hours, respectively. Although early MALDI-TOF resulted in antimicrobial therapy adjustments in a minority of cases, it may allow for more targeted and earlier antimicrobial therapy. Early MALDI-TOF from anaerobic blood culture bottles should be considered for improved patient care and antimicrobial stewardship.

Nonconcordance of E, N, and RdRp Genes in SARS-Coronavirus-2 Nucleic Acid Amplification Test Among Patients Older than 60 Years

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Introduction/Objective: During the COVID-19 pandemic, the FDA authorized emergency use of nucleic acid amplification (NAA) testing. Accurate and rapid testing identifies infected persons, especially among at-risk populations. In our institution, the InGenius platform detects three gene targets of SARS-Coronavirus-2: envelope (E), nucleocapsid (N), and RNA-dependent RNA polymerase (RdRp). Nonconcordance of these components present accuracy or precision errors or may

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correspond to varying expression of viral genes with disease progression.
Methods: We retrospectively analyzed the result components from 93 nasopharyngeal swabs from 50 patients older than 60 years and positive for SARS-Coronavirus-2 (SARS-CoV-2). The symptom onset date was determined by chart review.
Results: We found a significant 26% nonconcordance rate, with a predominant pattern demonstrating positive N with negative RdRp and E ($\chi 2 = 27.25$, $P < 0.0005$). This nonconcordant pattern was more prevalent at longer symptom durations. In 7 patients with serial testing, the transition from concordant to nonconcordant results occurred 12 days (95% CI 3.5 – 20.3 days) after symptom onset.
Conclusion: This may be caused by several mechanisms. Possibilities include decreased expression of E and RdRp over time, inhibition of expression by treatments or host immune response, or lower viral titers by clearance or migration to the lower respiratory tract. Presence of a different viral strain or systematic processing errors are less likely causes of nonconcordance. Future directions of study would determine whether a similar decline in RdRp and E detection is seen in tracheal samples or if this correlates with changes in symptom severity.

Concomitant Chronic Lymphocytic Leukemia and Mantle Cell Lymphoma Discovered by Flow Cytometry

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Casestudy: Chronic lymphocytic leukemia (CLL) accounts for about 30% of all lymphoid neoplasms and is the most common adult blood cancer in the Western world. Mantle cell lymphoma (MCL) accounts for only about 6% of all B-cell lymphomas in Western countries. MCL and CLL are both CD5 positive B-cell lymphoproliferative disorders. It is necessary to distinguish these two entities as MCL is a more aggressive disease, and requires specific treatment. MCL and CLL can occur in one patient at the same time and is often termed a composite lymphoma. We present an 84-year-old female with a history of endometrial cancer who was found to have splenomegaly and lymphadenopathy. Flow cytometry was performed upon her peripheral blood specimen which demonstrated two distinct populations of abnormal light chain restricted B-cell populations. One population demonstrated kappa light chain restriction and was positive for CD45, CD19, CD20, CD5, CD38, FMC-7, and CD22, representing MCL. The other population showed dim lambda light chain restriction that was also positive for CD45, CD19, dim CD20, CD5, and CD23, representing CLL. FISH studies demonstrated t(11;14), and four common deletions or chromosome aneuploidy associated with CLL. These findings confirmed the dual populations of CLL and MCL. This is an interesting case because it is a very rare combination with only a few cases having been reported with two distinct cell populations in one patient at the same time.

Lab Professional

Monitoring Of IGF-1 Levels In Type 2 Diabetic Patients With Macro And Microvascular Complications

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Introduction/Objective: Introduction: Type-2 diabetes have a risk factor of multiple complications such as coronary artery diseases (CAD), premature atheroscalerosis and diabetic retinopathy. IGF-1 is regulated by a balance of hormones such as growth hormone and insulin. It is important that circulating IGF1 in serum has normal levels to maintain glucose metabolism.
Objectives: Monitoring of IGF-1levels in T2DM with macrovascular complications (CVD) and microvascular complications (retinopathy).
Methods: Subjects and methods: The collection of samples started in June 2018 and ended in December 2018. A total of 114 subjects were enrolled in this study; 98 clinically diagnosed T2D patients who were recruited from the outpatient clinic of the National Institute for Diabetes and Endocrinology "NIDE", in addition to 16 healthy comparable control subjects (without diabetes). The subjects divided into 3 groups. Group 1; a population of 44 T2D patients with macrovascular complications (28 females and 16 males), the mean age was 57.4 years. Group 2; a population of 54 T2D patients with microvascular complicatios (34 females and 20 males), the mean age was 59.1 years. Group 3; a population of 16 healthy subjects (12 female and 4 males), the mean age was 59.2 years. Levels of FBS, C-peptide, HbA1c, Lipid profile, lipoprotein(a), hs-CRP and microalbuminurea were measured in all subjects. Seum concentration of IGF-1 was measured by commercially immunoenzymatic ELIZA method.
Results: It was found that serum concentration of IGF-1 decreased in diabetic patients groups compared to the control one. The mean±SD of group 1, group 2 and group 3 were (332.2±152.2), (316.9 ±142.2) and (625.4 ± 257.7) respectively.
Conclusion: It was observed that there was a negative correlation between serum IGF-1 levels in T2D patients compared to the control group. Also, it was found that T2D patients with microvascular complications had lower

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