# Post-COVID-19 Syndrome: Audiometric Findings in Patients with Audiological Symptoms

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## Abstract

Since the SARS-CoV-19 pandemic, the possibility of audiological involvement by this virus has been speculated without being able to generate a true cause-effect relationship. The objective of this observational, descriptive cross-sectional study is to describe the audiometric findings of post-COVID-19 patients with audiological symptoms. A sample of 47 patients with a diagnosis of COVID-19 infection was included: The age range was between 18 and 50 years old, the mean age was 37.0 years with a standard deviation of ±8.3 years, and 32 patients (68.1%) were female and 15 male patients (31.9%). Patients were recruited by the Otolaryngology service at Civil Fray Antonio Mayor Hospital from September 2020 to December 2022. Tonal audiometry was performed in a window of no more than 3 months from the onset of symptoms. The Chi-square test was used and odds ratios (OR) were established to associate the variables of post-COVID-19 audiological symptoms and the prevalence of hearing loss. A 95% confidence interval (CI) and statistical significance were considered of *p* ≤ 0.05. The audiological symptoms presented a prevalence of 74.4% for a sensation of ear fullness, 59.6% for tinnitus, and 51.1% for a sensation of hearing loss.

**Keywords:**audiometric findings; cross-sectional study; hearing loss; observational; post-COVID 19 syndrome.

Host and HBV Interactions and Their Potential Impact on Clinical Outcomes

## Abstract

Hepatitis B virus (HBV) is a challenge for global health services, affecting millions and leading thousands to end-stage liver disease each year. This comprehensive review explores the interactions between HBV and the host, examining their impact on clinical outcomes. HBV infection encompasses a spectrum of severity, ranging from acute hepatitis B to chronic hepatitis B, which can potentially progress to cirrhosis and hepatocellular carcinoma (HCC). Occult hepatitis B infection (OBI), characterized by low HBV DNA levels in hepatitis B surface antigen-negative individuals, can reactivate and cause acute hepatitis B. HBV genotyping has revealed unique geographical patterns and relationships with clinical outcomes. Moreover, single nucleotide polymorphisms (SNPs) within the human host genome have been linked to several clinical outcomes, including cirrhosis, HCC, OBI, hepatitis B reactivation, and spontaneous clearance. The immune response plays a key role in controlling HBV infection by eliminating infected cells and neutralizing HBV in the bloodstream. Furthermore, HBV can modulate host metabolic pathways involved in glucose and lipid metabolism and bile acid absorption, influencing disease progression. HBV clinical outcomes correlate with three levels of viral adaptation. In conclusion, the clinical outcomes of HBV infection could result from complex immune and metabolic interactions between the host and HBV. These outcomes can vary among populations and are influenced by HBV genotypes, host genetics, environmental factors, and lifestyle. Understanding the degrees of HBV adaptation is essential for developing region-specific control and prevention measures.

**Keywords:**HBV genotype H; clinical outcome; hepatitis B virus; immune response; metabolic interaction; viral adaptation.

Drug diluent and efficacy of methylene blue in septic shock: authors' reply

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# Performance characteristics of a prototype dialysate turbidity monitoring system to detect peritonitis in patients receiving peritoneal dialysis

## Abstract

**Background:**The risk of peritonitis has limited wider adoption of peritoneal dialysis (PD) in the United States. We developed a prototype bedside dialysate turbidity monitoring system, aiming to improve diagnostic accuracy relative to conventional approaches which depend on visual inspection and reporting of insensitive and non-specific symptoms.

**Methods:**The prototype system was tested in a single-centre, proof-of-principle clinical study in patients receiving intermittent PD. We obtained multiple effluent dialysate samples from each consenting participant. We compared turbidity measurements with diagnostic criteria endorsed by the International Society of Peritoneal Dialysis (ISPD).

**Results:**Overall, we analysed 983 specimens from 65 patients, including 105 samples from patients with peritonitis and 878 samples from patients without peritonitis. An operating point derived from a previous in vitro study yielded an unadjusted sensitivity and specificity of 95.2% and 91.5%, respectively. The majority of samples that did not meet ISPD diagnostic criteria were either cases detected before criteria were met or were related to active peritonitis treatment and resolution.

**Conclusion:**This proof-of-principle study demonstrates the feasibility and diagnostic accuracy of a prototype dialysate turbidity monitoring system for peritonitis surveillance.

**Keywords:**Peritoneal dialysis; peritonitis.

Active Surveillance of Antimicrobial Resistance and Carbapenemase-Encoding Genes According to Sites of Care and Age Groups in Mexico: Results from the INVIFAR Network

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## Abstract

We analyzed the antimicrobial resistance (AMR) data of 6519 clinical isolates of *Escherichia coli* (*n* = 3985), *Klebsiella pneumoniae* (*n* = 775), *Acinetobacter baumannii* (*n* = 163), *Pseudomonas aeruginosa* (*n* = 781), *Enterococcus faecium* (*n* = 124), and *Staphylococcus aureus* (*n* = 691) from 43 centers in Mexico. AMR assays were performed using commercial microdilution systems (37/43) and the disk diffusion susceptibility method (6/43). The presence of carbapenemase-encoding genes was assessed using PCR. Data from centers regarding site of care, patient age, and clinical specimen were collected. According to the site of care, the highest AMR was observed in *E. coli*, *K. pneumoniae*, and *P. aeruginosa* isolates from ICU patients. In contrast, in *A. baumannii*, higher AMR was observed in isolates from hospitalized non-ICU patients. According to age group, the highest AMR was observed in the ≥60 years age group for *E. coli*, *E. faecium*, and *S. aureus*, and in the 19-59 years age group for *A. baumannii* and *P. aeruginosa*. According to clinical specimen type, a higher AMR was observed in *E. coli*, *K. pneumoniae*, and *P. aeruginosa* isolates from blood specimens. The most frequently detected carbapenemase-encoding gene in *E. coli* was *bla*NDM (84%).

**Keywords:**INVIFAR; MRSA; VRE; antimicrobial resistance; carbapenem-resistance.

**Editorial: Molecular markers in rheumatic diseases and their comorbidities**

**Free PMC article**

*No abstract available*

**Keywords:**autoimmunity; comorbidities; inflammation; molecular markers; rheumatic diseases

**Comparison of clinical features between patients with anti-synthetase syndrome and dermatomyositis: Results from the MYONET registry**

**Free article**

**Abstract**

**Objectives:**To compare clinical characteristics, including the frequency of cutaneous, extramuscular manifestations, and malignancy, between adults with anti-synthetase syndrome (ASyS) and dermatomyositis (DM).

**Methods:**Using data regarding adults from the MYONET registry, a cohort of DM patients with anti-Mi2/-TIF1ɣ/-NXP2/-SAE/-MDA5 autoantibodies, and a cohort of ASyS patients with anti-tRNA synthetase autoantibodies (anti-Jo1/-PL7/-PL12/-OJ/-EJ/-Zo/-KS) were identified. Patients with DM sine dermatitis or with discordant dual autoantibody specificities were excluded. Sub-cohorts of patients with ASyS with or without skin involvement were defined based on presence of DM-type rashes (heliotrope rash, Gottron's papules/sign, violaceous rash, shawl sign, V sign, erythroderma, and/or periorbital rash).

**Results:**In total 1,054 patients were included (DM, n = 405; ASyS, n = 649). In ASyS cohort, 31% (n = 203) had DM-type skin involvement (ASyS-DMskin). A higher frequency of extramuscular manifestations, including Mechanic's hands, Raynaud's phenomenon, arthritis, interstitial lung disease, and cardiac involvement differentiated ASyS-DMskin from DM (all p< 0.001), whereas higher frequency of any of four DM-type rashes: heliotrope rash (n = 248, 61% vs n = 90, 44%), violaceous rash (n = 166, 41% vs n = 57, 9%), V sign (n = 124, 31% vs n = 28, 4%), and shawl sign (n = 133, 33% vs n = 18, 3%) differentiated DM from ASyS-DMskin (all p< 0.005). Cancer-associated myositis (CAM) was more frequent in DM (n = 67, 17%) compared with ASyS (n = 21, 3%) and ASyS-DMskin (n = 7, 3%) cohorts (both p< 0.001).

**Conclusion:**DM-type rashes are frequent in patients with ASyS; however, distinct clinical manifestations differentiate these patients from classical DM. Skin involvement in ASyS does not necessitate increased malignancy surveillance. These findings will inform future ASyS classification criteria and patient management.

**Case Report: Characterization of known (c.607G>C) and novel (c.416C>G) *ELANE* mutations in two Mexican families with congenital neutropenia**

**Abstract**

The most common causes of congenital neutropenia are mutations in the *ELANE* (Elastase, Neutrophil Expressed) gene (19p13.3), mostly in exon 5 and the distal portion of exon 4, which result in different clinical phenotypes of neutropenia. Here, we report two pathogenic mutations in *ELANE*, namely, c.607G>C (p.Gly203Arg) and a novel variant c.416C>G (p.Pro139Arg), found in two Mexican families ascertained via patients with congenital neutropenia who responded positively to the granulocyte colony-stimulating factor (G-CSF) treatment. These findings highlight the usefulness of identifying variants in patients with inborn errors of immunity for early clinical management and the need to rule out mosaicism in noncarrier parents with more than one case in the family.

**Keywords:**ELANE gene mutation; Mexican; c.416C>G; c.607G>C; case report; cyclic neutropenia (CyN); novel mutation; severe neutropenia.

**Evaluation of factors leading to poor outcomes for pediatric acute lymphoblastic leukemia in Mexico: a multi-institutional report of 2,116 patients**

**Abstract**

Background and aims: Pediatric acute lymphoblastic leukemia (ALL) survival rates in low- and middle-income countries are lower due to deficiencies in multilevel factors, including access to timely diagnosis, risk-stratified therapy, and comprehensive supportive care. This retrospective study aimed to analyze outcomes for pediatric ALL at 16 centers in Mexico.

**Methods:** Patients <18 years of age with newly diagnosed B- and T-cell ALL treated between January 2011 and December 2019 were included. Clinical and biological characteristics and their association with outcomes were examined.

**Results:** Overall, 2,116 patients with a median age of 6.3 years were included. B-cell immunophenotype was identified in 1,889 (89.3%) patients. The median white blood cells at diagnosis were 11.2.5 × 103/mm3. CNS-1 status was reported in 1,810 (85.5%), CNS-2 in 67 (3.2%), and CNS-3 in 61 (2.9%). A total of 1,488 patients (70.4%) were classified as high-risk at diagnosis. However, in 52.5% (991/1,889) of patients with B-cell ALL, the reported risk group did not match the calculated risk group allocation based on National Cancer Institute (NCI) criteria. Fluorescence in situ hybridization (FISH) and PCR tests were performed for 407 (19.2%) and 736 (34.8%) patients, respectively. Minimal residual disease (MRD) during induction was performed in 1,158 patients (54.7%). The median follow-up was 3.7 years. During induction, 191 patients died (9.1%), and 45 patients (2.1%) experienced induction failure. A total of 365 deaths (17.3%) occurred, including 174 deaths after remission. Six percent (176) of patients abandoned treatment. The 5-year event-free survival (EFS) was 58.9% ± 1.7% for B-cell ALL and 47.4% ± 5.9% for T-cell ALL, while the 5-year overall survival (OS) was 67.5% ± 1.6% for B-cell ALL and 54.3% ± 0.6% for T-cell ALL. The 5-year cumulative incidence of central nervous system (CNS) relapse was 5.5% ± 0.6%. For the whole cohort, significantly higher outcomes were seen for patients aged 1-10 years, with DNA index >0.9, with hyperdiploid ALL, and without substantial treatment modifications. In multivariable analyses, age and Day 15 MRD continued to have a significant effect on EFS.

**Conclusion:** Outcomes in this multi-institutional cohort describe poor outcomes, influenced by incomplete and inconsistent risk stratification, early toxic death, high on-treatment mortality, and high CNS relapse rate. Adopting comprehensive risk-stratification strategies, evidence-informed de-intensification for favorable-risk patients and optimized supportive care could improve outcomes.

**Keywords:** Mexico; acute lymphoblastic leukemia; diagnostic capacity; low-and middle income countries; pediatric oncology.