Review Am J Med Sci. 2022 Dec;364(6):685-694.  doi: 10.1016/j.amjms.2022.07.003. Epub 2022 Jul 16.

# Contamination of healthcare environment by carbapenem-resistant Acinetobacter baumannii

## Abstract

Acinetobacter baumannii is frequently found on floors, devices, and environmental sites in hospitals and can survive for prolonged periods and accumulate resistance determinants. The infection and presence of carbapenem-resistant A. baumannii (CRAB) in patients is associated with increased mortality, severe clinical outcomes, and longer lengths of stay at hospitals. This review addresses contamination by CRAB in corporal surfaces of patients and healthcare workers and environmental sites at healthcare-related settings. We summarized published data during the last decade on potential reservoirs for CRAB, including contamination frequency and the involved resistance mechanisms, and some measures associated with the elimination of CRAB from hospital surfaces.

**Keywords:**Acinetobacter baumannii; Antimicrobial resistance; Carbapenem-resistant; Healthcare-associated infections; Multidrug-resistant microorganism.

Rev Invest Clin. 2022 Dec 16;74(6):302-313. doi: 10.24875/RIC.22000146.

# What did we learn about coronavirus disease-19-associated acute kidney injury during the pandemic?

**Free article**

## Abstract

Initial reports suggested that kidney involvement after coronavirus disease 19 (COVID-19) infection was uncommon, but this premise appears to be incorrect. Acute kidney injury can occur through various mechanisms and complicate the course of up to 25% of patients with COVID-19 hospitalized in our Institution, and of over 50% of those on invasive mechanical ventilation. Mechanisms of injury include direct kidney injury and predominantly tubular, although glomerular injury has been reported, and resulting from severe hypoxic respiratory failure, secondary infection, and exposure to nephrotoxic drugs. The mainstay of treatment remains the prevention of progressive kidney damage and, in some cases, the use of renal replacement therapy. Although the use of blood purification techniques has been proposed as a potential treatment, results to date have not been conclusive. In this manuscript, the mechanisms of kidney injury by COVID-19, risk factors, and the mainstays of treatment are reviewed.

**Keywords:**Acute kidney injury; Blood purification techniques; Coronavirus disease 19; Cytokines; Renal replacement therapy.

Neurology. 2022 Dec 15;10.1212/WNL.0000000000201699. doi: 10.1212/WNL.0000000000201699. Online ahead of print.

# Microembolism and Other Links Between Migraine and Stroke: Clinical and Pathophysiologic Update

## Abstract

Migraine and stroke are highly prevalent diseases with a high impact on quality of life, with multiple epidemiological, pathophysiological, clinical, and prognostic areas of overlap. Migraine is a risk factor for stroke. This risk is explained by common risk factors, migraine-specific mechanisms, and non-migraine-specific mechanisms that have a relevant role in patients with migraine with aura (e.g., atrial fibrillation, paradoxical embolism through a patent foramen ovale). Another important link between migraine aura and ischemic stroke is cardiac embolism. Cardioembolism is the most frequent cause of ischemic stroke and increasing evidence suggests that microembolism, predominantly but not exclusively originating in the heart, is a contributing mechanism to the development of migraine aura. In this review, we discuss epidemiological aspects of the association between migraine and ischemic stroke, the clinical presentation of ischemic strokes in patients with migraine, and the differentiation between migrainous and non-migrainous infarctions. After that, we review migraine-specific and non-migraine-specific stroke mechanisms. We then review updated preclinical and clinical data on microembolism as a cause of migraine aura. In the last section, we summarize knowledge gaps and important areas to explore in future research. The review includes a clinical vignette with a discussion of the most relevant topics addressed.

Case Reports Eur J Med Genet . 2022 Dec;65(12):104653. doi: 10.1016/j.ejmg.2022.104653. Epub 2022 Oct 28.

# Intrafamilial phenotypic variability in autosomal recessive DOCK6-related Adams-Oliver syndrome

## Abstract

Adams-Oliver syndrome (AOS) is diagnosed in presence of aplasia cutis congenita (ACC) of the scalp and terminal transverse limb defects (TTLD). The autosomal recessive (AR) DOCK6-related form of AOS is most often associated with a severe phenotype including also central nervous system and ocular abnormalities. We report a sister and brother with different expression of the phenotype. Both were compound heterozygous pathogenic variants in the DOCK6 gene, including a heterozygous c.5939+2T > C intronic variant that was maternally inherited, and a heterozygous deletion of exons 10 to 21 that was paternally inherited. The sister had microcephaly, periventricular calcifications, minor retinal vasculopathy, and mild impaired neurodevelopment, but only very subtle limb abnormalities and no ACC. Her brother showed a classical DOCK6-related AOS phenotype, including a severe bilateral peripheral ischemic retinopathy. From a review of 22 molecularly confirmed cases with DOCK6-related AOS with ophthalmic examination, we found that 16 of them had retinal vascular pathology (72.7%), confirming as the major ocular anomaly. Documented intrafamilial variability in our family and the evidence revised from previous reports, confirm that AR DOCK6-related AOS expressivity can produce a "milder" phenotype without ACC or TTLD, which could be underdiagnosed in simplex cases because it is difficult to recognize out of a familial context. Therefore, in order to know its real magnitude is required the future inclusion of DOCK6 gene in NGS panels directed to the study of simplex cases of patients with microcephaly, periventricular calcifications, retinal vasculopathy, and/or cardiovascular defects.

**Keywords:**Aplasia cutis congenita; Intracranial calcifications; Intrafamilial variability; Retinal detachment; Retinal vasculopathy; Terminal transverse limb defects.

J Epidemiol Glob Health. 2022 Dec;12(4):504-515. doi: 10.1007/s44197-022-00069-x. Epub 2022 Oct 5.

# Multinational Prospective Cohort Study of Mortality Risk Factors in 198 ICUs of 12 Latin American Countries over 24 Years: The Effects of Healthcare-Associated Infections

Affiliations expand

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## Abstract

**Background:**The International Nosocomial Infection Control Consortium (INICC) has found a high ICU mortality rate in Latin America.

**Methods:**A prospective cohort study in 198 ICUs of 96 hospitals in 46 cities in 12 Latin American countries to identify mortality risk factors (RF), and data were analyzed using multiple logistic regression.

**Results:**Between 07/01/1998 and 02/12/2022, 71,685 patients, followed during 652,167 patient-days, acquired 4700 HAIs, and 10,890 died. We prospectively collected data of 16 variables. Following 11 independent mortality RFs were identified in multiple logistic regression: ventilator-associated pneumonia (VAP) acquisition (adjusted odds ratio [aOR] = 1.17; 95% CI: 1.06-1.30; p < 0.0001); catheter-associated urinary tract infection (CAUTI) acquisition (aOR = 1.34; 95% CI: 1.15-1.56; p < 0.0001); older age, rising risk 2% yearly (aOR = 1.02; 95% CI: 1.01-1.02; p < 0.0001); longer indwelling central line(CL)-days, rising risk 3% daily (aOR = 1.03; 95% CI: 1.02-1.03; p < 0.0001); longer indwelling urinary catheter(UC)-days, rising risk 1% daily (aOR = 1.01; 95% CI: 1.01-1.26; p < 0.0001); higher mechanical ventilation (MV) (aOR = 6.47; 95% CI: 5.96-7.03; p < 0.0001) and urinary catheter-utilization ratio (aOR = 1.19; 95% CI: 1.11-1.27; p < 0.0001); lower-middle level income country (aOR = 2.94; 95% CI: 2.10-4.12; p < 0.0001); private (aOR = 1.50; 95% CI: 1.27-1.77; p < 0.0001) or public hospital (aOR = 1.47; 95% CI: 1.24-1.74; p < 0.0001) compared with university hospitals; medical hospitalization instead of surgical (aOR = 1.67; 95% CI: 1.59-1.75; p < 0.0001); neurologic ICU (aOR = 4.48; 95% CI: 2.68-7.50; p < 0.0001); adult oncology ICU (aOR = 3.48; 95% CI: 2.14-5.65; p < 0.0001); and others.

**Conclusion:**Some of the identified mortality RFs are unlikely to change, such as the income level of the country, facility ownership, hospitalization type, ICU type, and age. But some of the mortality RFs we found can be changed, and efforts should be made to reduce CL-days, UC-days, MV-utilization ratio, UC-utilization ratio, and lower VAPs and CAUTI rates.

**Keywords:**Healthcare-associated infection; Hospital infection; Intensive care unit; Mortality; Risk factors.

Knee. 2022 Dec;39:100-105. doi: 10.1016/j.knee.2022.08.005. Epub 2022 Sep 28.

# Ghrelin level as a biomarker for knee osteoarthritis severity and appearance in HIV + patients

## Abstract

**Background:**Knee Osteoarthritis (KOA) is a multifactorial disease with several mechanisms to promote articular cartilage damage. New molecules, such as ghrelin, have been recently reported to participate in the pathogenesis and progression of KOA. In HIV + patients, arthralgias are the most frequent musculoskeletal manifestations, mainly affecting joints such as the knee. Also, it has been reported that HIV + patients have a reduction of ghrelin even with treatment compared to HIV- patients. However, there is no report in the literature evaluating ghrelin and KOA in the HIV + population. We aimed to evaluate whether serum ghrelin levels can function as a biomarker for OA in HIV + patients.

**Methods:**We recruited 40 patients, 20 HIV+, and 20 HIV- controls, and grouped as follows: HIV+/KOA+; HIV+/KOA-; HIV-/KOA+; HIV-/KOA-. Clinical features were obtained during clinical visits. Peripheral blood samples were acquired to measure serum ghrelin levels.

**Results:**The HIV+/KOA + group significantly reduced serum ghrelin levels when compared with the other groups. Comparing the ghrelin levels with the patients' nadir of CD4+ T-cells count, we identified a statistically significant negative correlation in the KOA- group (r = -0.80, P < 0.007). An ROC curve analysis, for the accuracy of ghrelin levels to identified HIV+/KOA + from HIV+/KOA- patients, found an area under the curve of 0.83 (95 % CI 0.65-0.10; P = 0.017), with a cut-off < 4026 pg/mL serum ghrelin levels, with a sensitivity of 0.62 (95 % CI 0.32-0.86), and a specificity of 0.10 (95 % CI 0.59-0.10).

**Conclusion:**This study shows the potential use of ghrelin levels as a biomarker for KOA in the high-risk HIV population that should be further analyzed.

**Keywords:**Biomarker; Ghrelin; HIV; Knee; Osteoarthritis.

Lupus. 2022 Dec 23;9612033221146923. doi: 10.1177/09612033221146923. Online ahead of print.

# Nutritional, biochemical, and clinical determinants of hyperuricemia in systemic lupus erythematosus patients: Relationship with clinical and renal disease activity

## Abstract

Systemic lupus erythematosus (SLE) is the prototypical autoimmune disease considered as an independent risk factor for mortality by cardiovascular disease. Currently, uric acid is described as a novel biomarker associated with cardiometabolic risk. However, nutritional and serum determinants that influence hyperuricemia development in autoimmune diseases have not been fully elucidated. This study aimed to assess the nutritional, biochemical, and cardiometabolic determinants of hyperuricemia and its relationship with clinical variables in SLE patients. A cross-sectional study was conducted in 167 SLE patients and 195 control subjects (CS). Nutrient intake, anthropometry, biochemical, and cardiometabolic indexes were evaluated. In SLE patients, adequate protein (OR = 0.4; *p* = 0.04) and carbohydrate (OR = 0.2; *p* = 0.01) intakes were associated with a lower risk of hyperuricemia. SLE patients with hyperuricemia presented a higher risk of clinical (OR = 2.2; *p* = 0.03) and renal activity (OR = 3.4; *p* < 0.01), as well as triglycerides ≥150 mg/dL (OR = 3.6; *p* < 0.01), hs-CRP ≥1 mg/L (OR = 3.1; *p* < 0.01), Kannel score ≥3 (OR = 2.5; *p* = 0.02), and BMI ≥25 kg/m2 (OR = 2.2; *p* = 0.02). Oppositely, serum levels of HDL-C ≥40 mg/dL (OR = 0.2; *p* < 0.01) were associated with a lower risk of hyperuricemia. According to the pharmacotherapy administered, prednisone treatment was associated with a high risk of hyperuricemia (OR = 4.7; *p* < 0.001). In contrast, the hydroxychloroquine treatment was associated with a lower risk of hyperuricemia (OR = 0.4; *p* = 0.02). In conclusion, SLE patients with hyperuricemia presented a high risk of clinical and renal activity as well as worse cardiometabolic status. Notably, an adequate intake of protein, carbohydrates, healthy HDL-C serum levels, and hydroxychloroquine treatment could be determinants of lower risk of hyperuricemia.

**Keywords:**cardiometabolic risk; clinical activity; health determinants; hyperuricemia; uric acid.

Braz J Microbiol. 2022 Dec;53(4):1951-1958. doi: 10.1007/s42770-022-00826-x. Epub 2022 Sep 15.

# Diagnosis of bacterial meningitis caused by Streptococcus pneumoniae, Neisseria meningitidis, and Haemophilus influenzae using a multiplex real-time PCR technique

## Abstract

Bacterial meningitis is one of the diseases that, despite the introduction of several vaccines, remains a serious public health concern. Streptococcus pneumoniae (Spn), Neisseria meningitidis (Nm), and Haemophilus influenzae (Hi) are responsible for most cases diagnosed in children, adolescents, and adult population. Rapid, sensitive, and specific laboratory assays are critical for effective diagnosis and treatment, particularly in countries like Mexico in which culture positivity rates are very low due to the use of antibiotics prior to sample collection and to delay in transporting samples to the laboratory. The aim of this study was to evaluate the use of real-time polymerase chain reaction (RT-PCR) of cerebrospinal fluid (CSF) as a rapid diagnostic test for bacterial meningitis and compare these results with bacterial culture in three general hospitals in Mexico. During a 5-year period (2014-2018), a total of 512 CSF samples obtained from patients in whom infectious meningitis was suspected as initial clinical diagnosis were tested with RT-PCR with species-specific targets for the three pathogens. For Spn, 5.07% samples were RT-PCR positive; 0.39% for Nm and none for Hi. Only five RT-PCR Spn positive samples had a positive culture. Sensitivity and specificity estimates for RT-PCR are 100% and 95.46%, respectively. DNA amplification methods can provide better sensitive diagnostic tests than the reference standard, which is culture, particularly when antimicrobial treatment is initiated before clinical samples can be obtained.

**Keywords:**Bacterial meningitis; Cerebrospinal fluid; Haemophilus influenzae; Neisseria meningitidis; Real-time PCR; Streptococcus pneumoniae.

Observational Study

Int J Environ Res Public Health. 2022 Dec 2;19(23):16154. doi: 10.3390/ijerph192316154.

# Prevalence of Depression, Anxiety, and Stress among High School Students during the COVID-19 Pandemic: A Survey Study in Western Mexico

**Free PMC article**

## Abstract

Social isolation and school closure may predispose adolescents to higher prevalence rates of depression, anxiety, and stress. In this cross-sectional observational study, the validated Spanish version of the Depression, Anxiety, and Stress Scale was administered to 3112 students aged 14-22 years old. We also collected data on participant gender, age group, school shift (morning or afternoon), school year, family type, whether they or any first-degree relative had been infected with COVID-19, whether any family member had died of COVID-19, and whether either of their parents worked. Mean scores were 8.34 ± 6.33 for depression, 7.75 ± 5.89 for anxiety, and 10.26 ± 5.84 for stress. Female students presented significantly higher scores on all three measures compared with male students. Students who had been infected with COVID-19, who had an infected family member, or who had a family member who died of COVID-19 also presented higher scores on all three measures. Identifying the symptoms and warning signs of depression and anxiety disorders is critical, particularly in vulnerable populations like adolescents.

**Keywords:**COVID-19; anxiety; depression; high school; stress

Randomized Controlled Trial

Nat Metab. 2022 Dec;4(12):1847-1857. doi: 10.1038/s42255-022-00698-3. Epub 2022 Nov 7.

# A randomized clinical trial of lipid metabolism modulation with fenofibrate for acute coronavirus disease 2019

**Free PMC article**

## Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) cytotoxicity may involve inhibition of peroxisome proliferator-activated receptor alpha. Fenofibrate activates peroxisome proliferator-activated receptor alpha and inhibits SARS-CoV-2 replication in vitro. Whether fenofibrate can be used to treat coronavirus disease 2019 (COVID-19) infection in humans remains unknown. Here, we randomly assigned inpatients and outpatients with COVID-19 within 14 d of symptom onset to 145 mg of oral fenofibrate nanocrystal formulation versus placebo for 10 d, in a double-blinded fashion. The primary endpoint was a severity score whereby participants were ranked across hierarchical tiers incorporating time to death, mechanical ventilation duration, oxygenation, hospitalization and symptom severity and duration. In total, 701 participants were randomized to fenofibrate (n = 351) or placebo (n = 350). The mean age of participants was 49 ± 16 years, 330 (47%) were female, mean body mass index was 28 ± 6 kg/m2 and 102 (15%) had diabetes. Death occurred in 41 participants. Compared with placebo, fenofibrate had no effect on the primary endpoint. The median (interquartile range) rank in the placebo arm was 347 (172, 453) versus 345 (175, 453) in the fenofibrate arm (P = 0.819). There was no difference in secondary and exploratory endpoints, including all-cause death, across arms. There were 61 (17%) adverse events in the placebo arm compared with 46 (13%) in the fenofibrate arm, with slightly higher incidence of gastrointestinal side effects in the fenofibrate group. Overall, among patients with COVID-19, fenofibrate has no significant effect on various clinically relevant outcomes.

Microb Drug Resist. 2022 Dec 30.

 doi: 10.1089/mdr.2022.0226. Online ahead of print.

# Carbapenemase-Encoding Genes and Colistin Resistance in Gram-Negative Bacteria During the COVID-19 Pandemic in Mexico: Results from the Invifar Network

## Abstract

In this study, we report the carbapenemase-encoding genes and colistin resistance in *Escherichia coli*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, and *Pseudomonas aeruginosa* in the second year of the COVID-19 pandemic. Clinical isolates included carbapenem-resistant *K. pneumoniae*, carbapenem-resistant *E. coli*, carbapenem-resistant *A. baumannii*, and carbapenem-resistant *P. aeruginosa*. Carbapenemase-encoding genes were detected by PCR. Carbapenem-resistant *K. pneumoniae* and carbapenem-resistant *E. coli* isolates were analyzed using the Rapid Polymyxin NP assay. *mcr* genes were screened by PCR. Pulsed-field gel electrophoresis and whole-genome sequencing were performed on representative isolates. A total of 80 carbapenem-resistant *E. coli*, 103 carbapenem-resistant *K. pneumoniae*, 284 carbapenem-resistant *A. baumannii*, and 129 carbapenem-resistant *P. aeruginosa* isolates were recovered. All carbapenem-resistant *E. coli* and carbapenem-resistant *K. pneumoniae* isolates were included for further analysis. A selection of carbapenem-resistant *A. baumannii* and carbapenem-resistant *P. aeruginosa* strains was further analyzed (86 carbapenem-resistant *A. baumannii* and 82 carbapenem-resistant *P. aeruginosa*). Among carbapenem-resistant *K. pneumoniae* and carbapenem-resistant *E. coli* isolates, the most frequent gene was *bla*NDM (86/103 [83.5%] and 72/80 [90%], respectively). For carbapenem-resistant *A. baumannii*, the most frequently detected gene was *bla*OXA-40 (52/86, 60.5%), and for carbapenem-resistant *P. aeruginosa*, was *bla*VIM (19/82, 23.2%). For carbapenem-resistant *A. baumannii*, five indistinguishable pulsotypes were detected. Circulation of *K. pneumoniae* New Delhi metallo-β-lactamase (NDM) and *E. coli* NDM was detected in Mexico. High virulence sequence types (STs), such as *K. pneumoniae* ST307, *E. coli* ST167, *P. aeruginosa* ST111, and *A. baumannii* ST2, were detected. Among *K. pneumoniae* isolates, 18/101 (17.8%) were positive for the Polymyxin NP test (two, 11.0% positive for the *mcr-1* gene, and one, 5.6% with disruption of the *mgrB* gene). All *E. coli* isolates were negative for the Polymyxin NP test. In conclusion, *K. pneumoniae* NDM and *E. coli* NDM were detected in Mexico, with the circulation of highly virulent STs. These results are relevant in clinical practice to guide antibiotic therapies considering the molecular mechanisms of resistance to carbapenems.

**Keywords:**COVID-19; NDM; carbapenem resistance; drug resistance.

Observational Study

Int J Environ Res Public Health. 2022 Dec 30;20(1):716. doi: 10.3390/ijerph20010716.

# Substance Use and Psychological Distress in Mexican Adults during COVID-19 Pandemic: A Cross-Sectional Study

**Free PMC article**

## Abstract

**Objectives:**This observational cross-sectional study examined changes in substance use during the coronavirus disease 2019 (COVID-19) pandemic in the Mexican population and evaluated whether depression or anxiety was associated with these new consumption patterns.

**Methods:**An online survey was distributed to the general population. Participants were questioned about their demographics, situation during the COVID-19 pandemic, and substance consumption patterns. The Patient Health Questionnaire-9 for depression and the Coronavirus Anxiety Scale were used.

**Results:**A total of 866 individuals completed the survey. The mean scores for the Patient Health Questionnaire-9 and Coronavirus Anxiety Scale were 8.89 ± 6.20 and 3.48 ± 3.22, respectively. The preferred substances were alcohol (19%), tobacco (16.5%), and marijuana (5.6%). Consumption of alcohol (*p* = 0.042) significantly increased during the pandemic and it was higher in women than in men (*p* = 0.040).

**Conclusions:**Substance use patterns were affected by the pandemic, with an increase in the number of users and consumption rate, as well as the reported psychiatric symptoms.

**Keywords:**addiction; anxiety; assessment; depression; drug and alcohol use; psychometrics.

Published Erratum

Arch Microbiol. 2022 Dec 24;205(1):37. doi: 10.1007/s00203-022-03373-z.

# Correction to: PCR system for the correct differentiation of the main bacterial species of the Klebsiella pneumoniae complex

No abstract available

J Crit Care. 2022 Dec 29;74:154246. doi: 10.1016/j.jcrc.2022.154246. Online ahead of print.

# Multinational prospective cohort study over 24 years of the risk factors for ventilator-associated pneumonia in 187 ICUs in 12 Latin American countries: Findings of INICC

No abstract available

Case Reports

Int J Mol Sci. 2022 Dec 27;24(1):465. doi: 10.3390/ijms24010465.

# Biochemical, Clinical, and Genetic Characteristics of Mexican Patients with Primary Hypertriglyceridemia, Including the First Case of Hyperchylomicronemia Syndrome Due to GPIHBP1 Deficiency

**Free PMC article**

## Abstract

Primary hypertriglyceridemia (PHTG) is characterized by a high concentration of triglycerides (TG); it is divided between familial hyperchylomicronemia syndrome and multifactorial chylomicronemia syndrome. In Mexico, hypertriglyceridemia constitutes a health problem in which the genetic bases have been scarcely explored; therefore, our objective was to describe biochemical-clinical characteristics and variants in the *APOA5, GPIHBP1, LMF1,* and *LPL* genes in patients with primary hypertriglyceridemia. Thirty DNA fragments were analyzed using PCR and Sanger sequencing in 58 unrelated patients. The patients' main clinical-biochemical features were hypoalphalipoproteinemia (77.6%), pancreatitis (18.1%), and a TG median value of 773.9 mg/dL. A total of 74 variants were found (10 in *APOA5*, 16 in *GPIHBP1*, 34 in *LMF1*, and 14 in *LPL*), of which 15 could be involved in the development of PHTG: 3 common variants with significative odds and 12 heterozygous rare pathogenic variants distributed in 12 patients. We report on the first Mexican patient with hyperchylomicronemia syndrome due to GPIHBP1 deficiency caused by three variants: p.R145\*, p.A154\_G155insK, and p.A154Rfs\*152. Moreover, eleven patients were heterozygous for the rare variants described as causing PHTG and also presented common variants of risk, which could partially explain their phenotype. In terms of findings, two novel genetic variants, c.-40\_-22del *LMF1* and p.G242Dfs\*10 *LPL,* were identified.

**Keywords:**APOA5; GPIHBP1; LMF1; LPL; Mexicans; hyperchylomicronemia; primary hypertriglyceridemia.