# Clinical characteristics and functional outcome of pediatric ocular trauma in a third level reference hospital in Guadalajara, México

## Abstract

**Background:**Ocular trauma is one of the leading causes of decreased visual acuity and monocular blindness in the pediatric population. Since its occurrence is potentially preventable, it is essential to understand its demographic characteristics and risk factors to alert and implement prevention and health promotion programs.

**Methods:**We conducted a retrospective study in which we reviewed 187 clinical records of patients ≤ 15 years old with the diagnosis of severe ocular trauma admitted in 2017 to the Hospital Civil de Guadalajara. We analyzed demographic variables, circumstances of the event, type of treatment, and the evolution of visual acuity and complications.

**Results:**In total, 187 patients and 188 eyes were included; the average age was 6.99 ± 4.1 years. Children of 2 to 5 years of age (41%) were the most affected, and a higher occurrence was observed in males (73%). Open ocular trauma was the most common type of injury (72.7%) caused by sharp objects (45.4%). Most injuries occurred at home (78.1%), without adult supervision (48.1%), and during leisure time (74.9%). Most events were accidental (80.4%), although 12.3% were direct aggression. Surgery was required in 179 patients, in whom corneal injury repair (43.2%) was the most commonly used procedure. Final visual acuity was quantified in 132 eyes, and visual acuity < 20/200 was found in 18.1%. Loss of 4.2% of the eyeballs was recorded.

**Conclusions:**The highest proportion of cases was identified in male patients ≤5 years old, unsupervised by an adult. Many eye injuries are preventable, so it is necessary to implement socio-educational programs in alliance with pediatric organizations that alert the severity of the problem and promote safe environments.

# Using hypnoanalysis and guided imagery to identify and manage emotional aspects of multiple sclerosis

## Abstract

**Background:**To date, no studies have used hypnosis to examine and manage the potential emotional causes of multiple sclerosis (MS) in the scientific field; therefore, we decided to compare the effectiveness of hypnoanalysis and guided imagery for determining and manage these emotional causes.

**Methods:**Fifteen participants with severe MS were included and assigned into 2 groups: hypnoanalysis and guided imagery. In the hypnoanalysis group, the participants underwent 10 hypnotic sessions to understand events related to the cause of the disease, which were restructured (the events were modified by adding the psychological resources that each involved person needed); in addition, other techniques were used to investigate the causes and solutions according to the participants' unconscious. The guided imagery group received 10 group sessions of body relaxation and guided imagery, which were recorded for practice at home. Outcome measures, namely, disability (the Expanded Disability Status Scale, EDSS), quality of life (QoL, measured with the SF-36) and number of relapses, were evaluated 4 months previous the intervention, at baseline, post-intervention, and 3 months later.

**Results:**Hypnoanalysis revealed that stressful events and psychoemotional maladaptive patterns acted as causal, detonating, or aggravating factors of disease, and psychoemotional changes were the most frequent and varied solutions. No changes were observed in disability between the two groups. The guided imagery group showed an improvement in 2 subscales of QoL when compared with the hypnoanalysis group (which disappeared at the follow-up); this difference is probably due to the increased number of sessions and probably due to psychoemotional maladaptive patterns being more frequently mentioned than difficult circumstances in life and/or unsolved past events. However, the techniques used in hypnoanalysis were effective in understanding the potential emotional causes of MS, which showed high intra- and inter-participant consistency.

**Conclusions:**The daily use of guided imagery overcame the restructuring of negative past events to improve QoL in patients with MS.

# Analysis of the complete genome of HBV genotypes F and H found in Brazil and Mexico using the next generation sequencing method

## Abstract

**Introduction and objectives:**Hepatitis B Virus is classified into ten different genotypes (A- J). Genotypes F and H cluster apart from others in phylogenetic trees and is particularly frequent in the Americas. The aim of this study was to sequence complete genomes of samples of HBV genotypes F and H from Brazil and Mexico using next generation sequencing (NGS) and to study relevant characteristics for the disease associated with this virus.

**Materials and methods:**Ninety plasma samples with detectable HBV DNA belonging to the F (n=59) and H (n=31) genotypes were submitted to amplification of the complete HBV genome by three different methologies. Data analysis was developed using bioinformatics tools for quality assurance and comprehensive coverage of the genome. Sequences were aligned with reference sequences for subgenotyping and detecting variants in relevant positions. A phylogenetical tree was constructed using Bayesian methods.

**Results:**HBV genome of 31 samples were amplified and 18 of them were sequenced (HBV/F=16 and HBV/H=2). One genotype F sample was co-infected with the F1b and F3 subgenotypes, while the other samples were all F2a subgenotype. Two genotype H samples clustered with other Mexican sequences. The main variants observed were found in preS and S genes (7/18) and mutations in the precore/core region (11/18).

**Conclusions:**A NGS methodology was applied to F and H genotypes samples from Mexico and Brazil to fully characterize their sequences. This methodology will be relevant for clinical and epidemiological studies of hepatitis B in Latin America.

**Keywords:**Genotype; Hepatitis B; Latin America; Next-generation; Sequencing.

# [Consensus on the use of iSGLT2 in the treatment of patients with type 2 diabetes *mellitus*]

## Abstract

Although in recent years in Mexico the quality of diabetes mellitus (DM) care has improved and access to health services and medications has increased, there is a lack of adherence to the recommendations of the clinical guidelines, which could explain the poor glycemic control in many of the patients with DM. Sodium-glucose cotransporter type 2 (iSGLT2) inhibitors have been the last class of antidiabetic agents to receive approval from the Food and Drug Administration (FDA) and COFEPRIS (Mexico). In order to improve the use of SGLT2i in clinical practice in Mexico, this paper presents the recommendations issued by a panel of eleven Mexican experts based on the new published evidence for the treatment of patients with DM2.

**Keywords:**Mexico; SGLT2i.; Type 2 diabetes mellitus.

# Building a culture of scientific integrity among the academic and research communities of Latin America

**Free article**

No abstract available

# The Effect in Renal Function and Vascular Decongestion in Type 1 Cardiorenal Syndrome Treated with Two Strategies of Diuretics, a Pilot Randomized Trial

## Abstract

**Aim:**The main treatment strategy in type 1 cardiorenal syndrome (CRS1) is vascular decongestion. It is probable that sequential blockage of the renal tubule with combined diuretics (CD) will obtain similar benefits compared with stepped-dose furosemide (SF).

**Methods:**In a pilot double-blind randomized controlled trial of CRS1 patients were allocated in a 1:1 fashion to SF or CD. The SF group received a continuous infusion of furosemide 100 mg during the first day, with daily incremental doses to 200 mg, 300 mg and 400 mg. The CD group received a combination of diuretics, including 4 consecutive days of oral chlorthalidone 50 mg, spironolactone 50 mg and infusion of furosemide 100 mg. The objectives were to assess renal function recovery and variables associated with vascular decongestion.

**Results:**From July 2017 to February 2020, 80 patients were randomized, 40 to the SF and 40 to the CD group. Groups were similar at baseline and had several very high-risk features. Their mean age was 59 ± 14.5 years, there were 37 men (46.2%). The primary endpoint occurred in 20% of the SF group and 15.2% of the DC group (p = 0.49). All secondary and exploratory endpoints were similar between groups. Adverse events occurred frequently (85%) with no differences between groups (p = 0.53).

**Conclusion:**In patients with CRS1 and a high risk of resistance to diuretics, the use of CD compared to SF offers the same results in renal recovery, diuresis, vascular decongestion and adverse events, and it can be considered an alternative treatment. ClinicalTrials.gov with number [NCT04393493](http://clinicaltrials.gov/show/NCT04393493) on 19/05/2020 retrospectively registered.

# Management of soft-tissue coverage of open tibia fractures in Latin America: Techniques, timing, and resources

## Abstract

**Purpose:**This study examined soft-tissue coverage techniques of open tibia fractures, described soft-tissue treatment patterns across income groups, and determined resource accessibility and availability in Latin America.

**Methods:**A 36-question survey was distributed to orthopaedic surgeons in Latin America through two networks: national orthopaedic societies and the Asociación de Cirujanos Traumatólogos de las Américas (ACTUAR). Demographic information was collected, and responses were stratified by income groups: high-income countries (HICs) and middle-income countries (MICs).

**Results:**The survey was completed by 469 orthopaedic surgeons, representing 19 countries in Latin America (2 HICs and 17 MICs). Most respondents were male (89%), completed residency training (96%), and were fellowship-trained (71%). Only 44% of the respondents had received soft-tissue training. Respondents (77%) reported a strong interest in attending a soft-tissue training course. Plastic surgeons were more commonly the primary providers for Gustilo Anderson (GA) Type IIIB injuries in HICs than in MICs (100% vs. 47%, p<0.01) and plastic surgeons were more available (<24 h of patient presentation to the hospital) in HICs than MICs (63% vs. 26%, p = 0.05), demonstrating statistically significant differences. In addition, respondents in HICs performed free flaps more commonly than in MICs for proximal third (55% vs. 10%, p<0.01), middle third (36% vs. 9%, p = 0.02), and distal third (55% vs. 10%, p<0.01) lower extremity wounds. Negative Pressure Wound Therapy (NPWT or Wound VAC) was the only resource available to more than half of the respondents. Though not statistically significant, surgeons reported having more access to plastic surgeons at their institutions in HICs than MICs (91% vs. 62%, p = 0.12) and performed microsurgical flaps more commonly at their respective institutions (73% vs. 42%, p = 0.06).

**Conclusions:**The study demonstrated that most orthopaedic surgeons in Latin America have received no soft-tissue training,HICs and MICs have different access to plastic surgeons and different expectations for flap type and definitive coverage timing, and most respondents had limited access to necessary soft-tissue coverage surgical resources. Further investigation into differences in the clinical outcomes related to soft-tissue coverage methods and protocols can provide additional insight into the importance of timing and access to specialists.

# Butyrate administration strengthens the intestinal epithelium and improves intestinal dysbiosis in a cholestasis fibrosis model

## Abstract

**Aim:**Intestinal dysfunction in cirrhosis patients is linked to death by bacterial infections. Currently, there is no effective therapy for this complication. This study aims to evaluate butyrate, a novel postbiotic, on the intestinal inflammatory response, tight junction proteins and the microbiota in the cholestasis model.

**Methods and results:**Wistar rats underwent 15 days of bile duct ligation (BDL). We administered butyrate at a concentration of 1%. The BDL group did not receive treatment. The results showed that butyrate could significantly reduce pro-inflammatory cytokines (IL-17A, IFN-γ, TNF-α) in the ileum and colon while promoting IL-10 expression in the colon. Moreover, it significantly promotes tight junction protein (cld-1, occludin and ZO-1) expression in the ileum. A similar effect was observed in the colon except for ZO-1. Additionally, butyrate limited taxa diversity loss and promoted probiotic genera expansion such as Lachnospira, Prevotella and Lactobacillus. The increase in Turicibacter and Clostridiaceae distinguished the BDL group.

**Conclusions:**Butyrate is effective in regulating the inflammatory response, tight junction proteins and limits bacterial diversity loss.

**Significance and impact of the study:**This research reveals that butyrate could represent an interesting postbiotic metabolomic intervention for intestinal epithelium dysfunction in liver disease.

**Keywords:**butyrate; cholestasis; inflammation; intestine; microbiome; tight junctions.