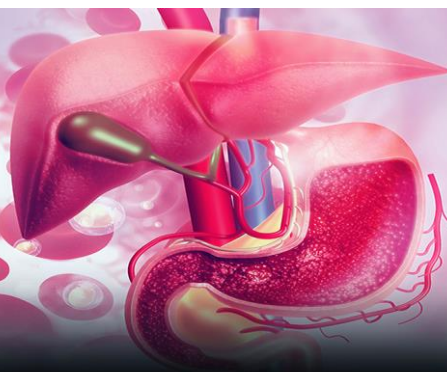


Enteron



Dear Doctor,

Greetings from Micro Labs limited.

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Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Ltd

Fecal microbial transplantation improves clinical outcomes in patients with drug-resistant bacteria

Transferring fecal matter from stable donor digestive systems to critically sick patients already diagnosed with drug-resistant bacteria contributed to shorter hospital visits, less bloodstream infections and easier-to-treat infections, according to study chosen for presentation at Digestive Disease Week[®] (DDW) 2020. Investigators from the research performed the switch, known as fecal microbial transplantation (FMT), in 20 patients diagnosed with multidrug-resistant microbes during intensive medical treatment, including carbapenemase-producing Enterobacteriaceae (such as *Escherichia coli*), enterococci immune to vancomycin, or Enterobacteriaceae extended-spectrum beta-lactamase. Following the transplantation, patients were monitored for six months and their treatment condition combined with six months previous to FMT. Although just 41 percent of the 17 patients who completed the full follow-up had removed the resistant infection, researchers identified other advantages for the patients, who had been regularly admitted and treated with a number of serious conditions. The study contained hematological cancer patients with multidrug resistant bacteria in need of stem-cell transplants and kidney transplant patients with urinary and bloodstream infections. Past work showed that FMT is successful in the treatment of *C. Difficult*, a healthcare-related illness that frequently triggers serious vomiting in hospitalized patients.



Investigators needed to learn for this research whether FMT could help decolonize, or eliminate multi-drug-resistant bacteria from the bodies of patients who have established tolerance to more than one form of antibiotic. Multi-drug-resistant species need ultra-resort therapies with larger intervention that may have serious side effects. Investigators also wanted to learn whether FMT might have an effect on certain health results such as duration of hospital stay, readmissions and bloodstream infection growth.

There was a decline in bloodstream infections with aggressive species and overall blood stream infections for all patients. Eight patients progressed so much that they could receive stem-cell transplants within six months of FMT. No significant adverse effects have been recorded in relation to FMT.

The findings indicate that the effects of FMT do not only originate from decolonizing resistant bacteria, but from certain pathways linked to microbiota that need further analysis could have beneficial impacts. A drawback of the analysis is that researchers contrasted the experiences of patients before and during diagnosis instead of utilizing a control group but the findings were significant enough with some extremely ill patients to justify more studies.

Source: Digestive Disease Week® (DDW) 2020



Treatment of complex congenital intrahepatic arterioportal fistula with a Combined endovascular-surgical treatment: A case report

In children, congenital intrahepatic arterioportal fistula (IAPF) is a unusual vascular malformation that induces extreme portal hypertension (PH) if untreated with poor prognosis. Radiological embolization is generally considered the first-line treatment for basic IAPF; however, complicated hepatic vascular lesions may not be resolute. If endovascular embolization is not adequate to fully obliterate the IAPF, surgical intervention is required, but in small children it has been correlated with extreme morbidity and mortality. In fact, signs aren't defined.

CASE PRESENTATION

Chief complaints

A 7-month-old girl (4500 g of weight), with trisomy 21 and intraventricular septal defect, was referred for complex vascular lesion of the liver.

History of present illness

At presentation, the patient showed a poor clinical condition with GI bleeding, severe PH with massive ascites, acute respiratory failure, fever, cholestasis, thrombocytopaenia, coagulopathy, vitamin-K under-supplementation and growth retardation. Abdomen Doppler ultrasonography (US) detected multiple intrahepatic shunts between the left portal vein (PV) and the left HA with turbulent flow characterised by arterial spikes. The right and main PV were dilated with hepatofugal flow. A dilatation of the common biliary duct (6 mm) and the intrahepatic biliary tree were also detected. A computed tomography (CT) scan confirmed a complex IAPF in segment IV of the liver formed by the connection of the left PV, left and right HA, left gastric



artery, phrenic artery and numerous branches from an accessory right HA that arose from the superior mesenteric artery (SMA). Upper-gastrointestinal endoscopy showed esophageal varices grade 3 with red marks, which were treated by sclerotherapy. Due to massive ascites, diuretic treatment with furosemide and spironolactone was started. However, despite the maximization of the diuretic therapy, the ascites didn't improve and the patient presented acute respiratory distress due to abdominal distension. Therefore, daily paracentesis through a percutaneous abdominal pigtail drainage was required.

Final Diagnosis

The patient had no history of previous liver procedure or abdominal trauma, and thus congenital complex IAPF was diagnosed and confirmed by arteriography of the celiac trunk, SMA and phrenic artery that supplied the hepatic vascular lesion.

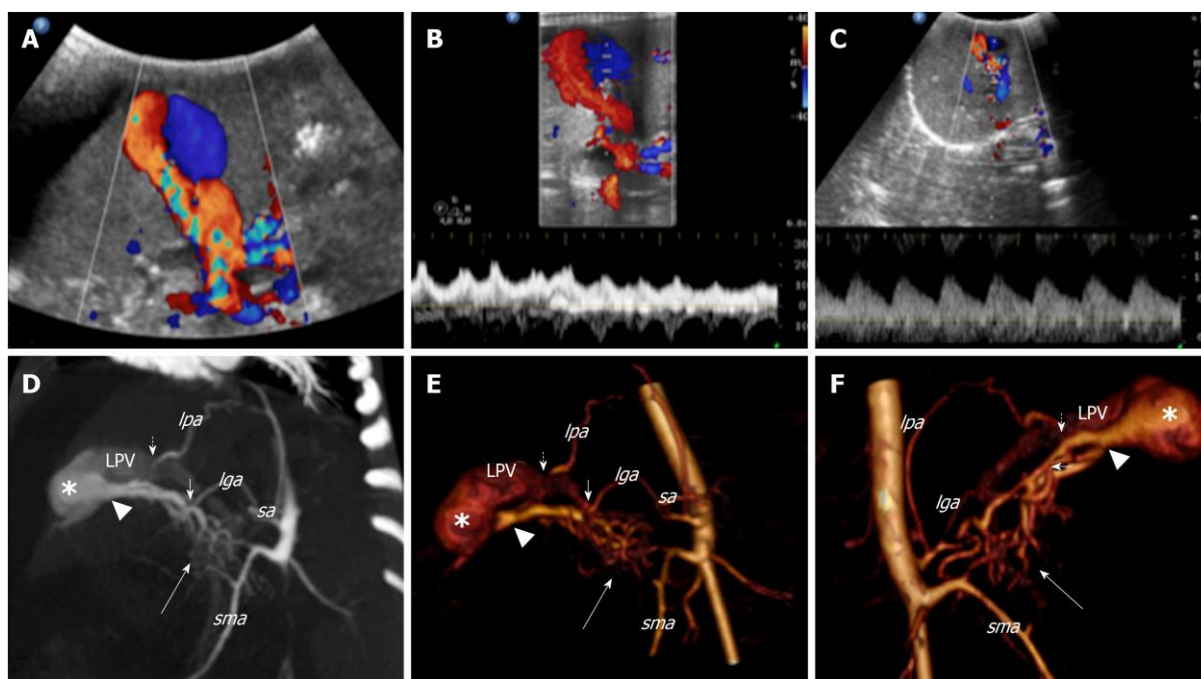
Treatment

After arteriography, radiological embolisation of multiple branches that originated from the right HA and the SMA was performed by glue cast, and by metallic coils from the phrenic artery. After embolisation, the flow into the fistula decreased but the arterial-venous shunt persisted because it was supplied by an arterial network of dysplastic collaterals from the celiac trunk and SMA, which could not be catheterised due to their small size. After 7 d, Doppler US showed a partial occlusion of the IAPF with persistent reverse pulsatile flow into the PV. As the clinical condition did not improve, a combined endovascular-surgical procedure was planned. The hybrid procedure first used selective angiography to confirm a persistent flow into the intrahepatic fistula supplied by a dysplastic arterial network that originated from the right HA and the SMA, for which a selective embolisation was not feasible. Subsequently, through a midline xifo-umbilical laparotomy and under Doppler US guide, direct left PV puncture permitted a retrograde venous catheterisation of the fistula and multiple embolisations of the shunt using GDC 360 [4 × 15 (n = 2), 4 × 8 (n = 1), 3 × 8 (n = 2)].

After embolisation, persistent arterial flow into the vascular lesion was observed. Therefore, a second surgical phase was performed that consisted of ligation of multiple arterial branches from the right HA (n = 2) and SMA (n = 2). After the hybrid procedure, there was absence of flow into the IAPF as well as hepatopetal flow into the PV. The post-operative course was uneventful; anticoagulant therapy was administered for 3 months to prevent PV thrombosis. Subsequently, PH progressively improved with gradual resolution of the ascites, allowing to suspend the daily paracentesis and to progressive withdraw diuretic drugs. However, US evidence of intra/extrahepatic biliary dilatation and hyperbilirubinaemia (total/direct bilirubin: 22.7/18 mg/dL) persisted. A percutaneous transhepatic cholangiography (PTC) revealed a uniform extrahepatic/intrahepatic biliary tree



dilatation. Therefore, an internal-external biliary drainage (8 Fr) was inserted, and after 1 month it was replaced by an internal biliary stent (Percuflex, 7 Fr, 7 cm).



Colour Doppler ultrasound and computed tomography images that show the congenital intrahepatic arterioportal fistula.

A: Colour Doppler ultrasound images of the liver revealed aneurysmal dilatation of the left portal vein with turbulent bidirectional flow;

B: Particularly, the venous flow appeared arterialised;

C: Several dilated and tortuous branches of the hepatic artery with high flow rate supplied the dilated portal vein segment;

D: Contrast enhanced multidetector computer tomography images of the abdomen reformatted on both the left oblique: maximum intensity projection;

E: 3D volume rendered;

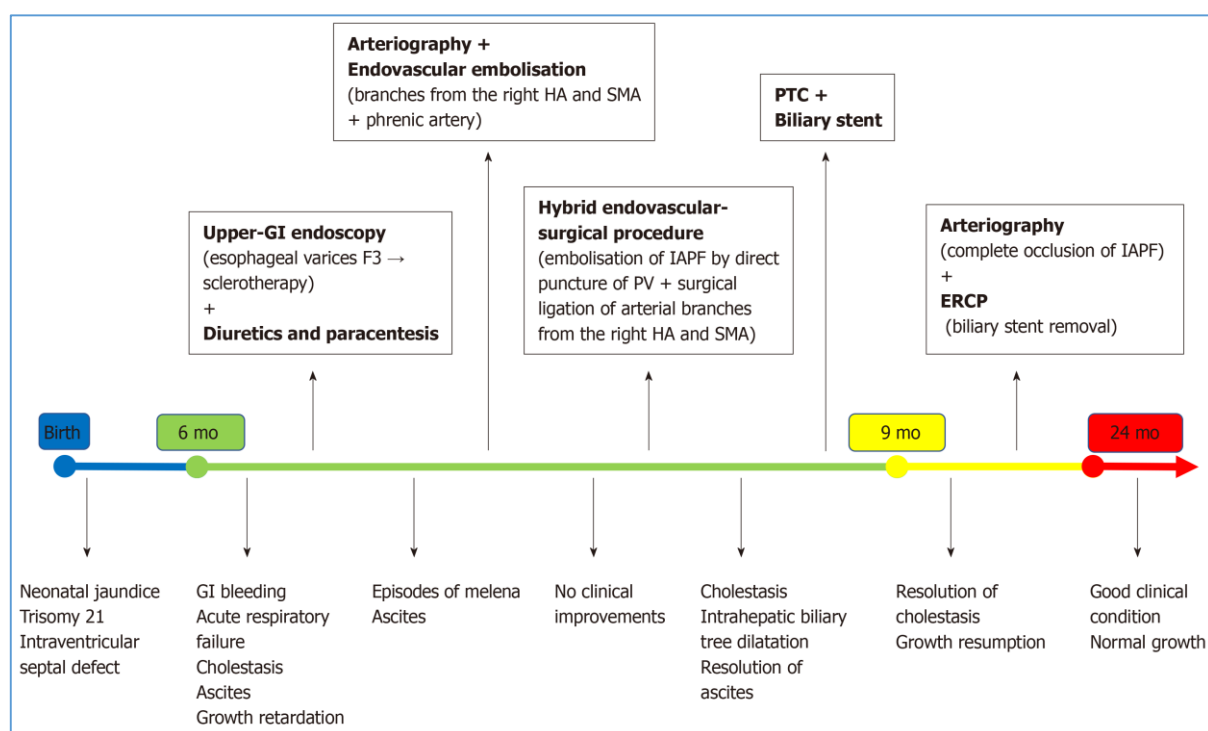
F: 3D-VR right oblique plane.

Contrast enhanced multi-detector computer tomography shows the complex vascular malformation characterised by a dense dysplastic small arterial network that arose from the hepatic and superior mesenteric system (thick arrow)



and directly converged to the left portal vein through one Y-shaped fistula within the Rex recess (arrow head). Two additional feeders to the vascular anomaly [from the phrenic (short dotted arrow) and left gastric (short arrow) artery, respectively] were also detected. lga: Left gastric artery; lpa: Left phrenic artery; sa: Splenic artery; sma: Superior mesenteric artery; LPV: Left portal vein.

Summary of the patient's clinical course and the therapeutic management



CONCLUSION

Endovascular embolisation has been deemed the first-line therapy for congenital IAPF after first contact in 1996. This has an average effectiveness rate of 79.5 percent, and in 25.6 percent of cases this needs multiple endovascular operations. In 81.5 percent of children with basic IAPF (type-1/2), and 62.5 percent with complicated IAPF (type-3), radiological embolization has been resolutive to date. However, details on the best form of embolizing agent (coils or glue), anticoagulant protocol post-procedure, and long-term risks and results are missing, and need to be identified. Surgical operations are seldom used as first-line care and owing to the absence of long-term results, no clear guidelines can be drawn yet. While more widely conducted surgical



ligation of the arterial arteries supplying the IAPF, although done alone, it does not yet seem to be successful for complicated IAPF. Furthermore, certain surgical methods (portacaval shunting, liver resection, or LT), both of which were used during embolization as rescue procedures, have little specified definition and are restricted to personal experience.

REFERENCE

Angelico R, Paolantonio G, Paoletti M, et al. Combined endovascular-surgical treatment for complex congenital intrahepatic arterioportal fistula: A case report and review of the literature. *World J Hepatol* 2020; 12(4): 160-169



Patterns and Incidence of COVID-19 among inflammatory bowel disease patients

INTRODUCTION

The first cases of infection with COVID-19 were identified in Wuhan, China, in December 2019. Italy (Lombardy in particular) and France (Northeast in particular) were badly affected. Both doctors and patients with inflammatory bowel disease (IBD) are highly concerned that immunosuppressants or biologics that increase the risk of an infection with COVID-19. IOIBD has put in place an international registry, SECURE-IBD, for tracking all the cases with inflammatory bowel diseases (IBD) infected by COVID-19 (SECURE-IBD Registry. <http://www.covidibd.org>). It will describe the outcomes of infected patients and the association between IBD-related medications and these outcomes.

It is understood that immune-mediated inflammatory disorders (IMIDs), like IBD, are correlated with improvements in host defense. Hence, one may suspect that IMID patients might be more vulnerable to COVID-19 infection. Interestingly however, studies from places subject to elevated risk of COVID-19 infection do not indicate cases of COVID-19 IBD patients. Ongoing registries cannot address this issue due to the lack of accurate denominator data.

METHODS

In a large cohort of IBD patients from France (Nancy University Hospital; 2000 patients) and Italy (Humanitas, Milan; 4000 patients), all consecutive IBD patients infected by COVID-19 were included since the beginning of the pandemic. COVID-19 cases were identified via regular tele-medicine visits and infusion centre visits. Diagnosis of COVID-19 was made by routinely used PCR nasopharyngeal swab testing for all patients. The cumulative incidence was calculated. The denominator was based on prospectively maintained databases used to identify patients eligible for clinical trials at both centres

RESULTS

Nine patients have Crohn's disease, three had an active disease and all but one was treated with biological therapy and/or immunosuppressive therapy at time of COVID-19 infection diagnosis. Four are male, all but one was under 60 years and two have comorbidities, including obesity and hypertension, that are considered as risk



factors for a worse outcome of COVID-19 infection. Five out of 15 patients were hospitalized, but none of them required intensive care and no death was reported. The cumulative incidence of COVID positive IBD patients in this cohort is 0.0025, which is broadly similar to that observed in the general population (current cumulative incidence in France and Italy is 0.0017). By contrast, mortality rate (13%) and need for intensive care support (6%) are much higher in the general population than in this combined cohort (no cases).

DISCUSSION

A central characteristic of COVID-19-related acute respiratory distress syndrome (ARDS) is immune system stimulation that is characterized by a cytokine surge. IBD patients may be covered with the usage of effective anti-inflammatory medications such as anti-TNF treatment and present with milder illness or are more often asymptomatic than in the general community. Anti-TNF treatment has been linked in a broad French clinical study with a reduced risk for opportunistic virus infections. Interestingly, no deaths were recorded in patients undergoing SARS-COV transplantation treated with chemotherapy or other immunosuppressive medications (severe acute respiratory syndrome Coronavirus) and MERS-COVID (Middle East respiratory syndrome Coronavirus) outbreaks. A similar trend was recently reported during the recent COVID-19 pandemic. The IBD population's young age and low comorbidity levels, including asthma, coronary disease, lung disease, considered to be correlated with a bad outcome during COVID-19 infection, may also play a part. The recommendations of the European Crohn and Colitis Organisation (ECCO) prescribe vaccine of such viruses like influenza viruses. It has been hypothesized that vaccination may protect against viral infections in general.

CONCLUSION

In a broad sample of 6,000 IBD patients diagnosed in referral centers from high incidence regions, it was observed that IBD patients did not bear an elevated risk for developing COVID-19 infection and having less severe types while infected.

REFERENCES

Allocca M, Fiorino G, Zallot C, et al. Incidence and patterns of COVID-19 among inflammatory bowel disease patients from the Nancy and Milan cohorts. *Clini Gastroenterol Hepatol* 30 April 2020