The effect of the COVID-19 pandemic in intestinal rehabilitation and transplant patients, initial results of an international survey

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Using Virtual Technology to Preserve the Lifespan of Central Venous Access Devices

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Aim: To use a web based management platform to prevent occlusions and preserve the lifespan of a central venous access devices (CVAD) for Home Parenteral Nutrition (HPN).

Background: Despite many techniques, adjuncts and pharmaceutical agents there are some CVADs that remain troublesome with frequent partial and full occlusions that require CVAD exchanges. The CVAD for a child or young person that requires HPN can be described as a “lifeline” and all options to maintain long term patency should be utilised. MicrelCare have a web based care management platform that monitors real time infusion pressures relaying information from the home to the hospital.

Methodology: Using one teenage male on HPN (who had experienced 3 CVAD exchanges in 2 years) as a candidate for MicrelCare, we virtually monitored his CVAD pressure’s and infusion alarms via a real time platform. This virtual platform alongside clinical correlation (patient consultations and physical assessment) allowed for the determination of pressure range monitoring and the early detection of line stiffness and pre cursors to occlusion. Interestingly the pressure bar for this young man is lower than MicrelCare would expect and that of our patient cohort.

Results: We were able to determine that for this patient when the CVAD pressure levels reached 0.2 bar it was imperative that we physically assessed the CVAD and followed the in house protocol of Urokinase/Alteplase instilment followed by an Ethanol treatment if required (including hub inspection and POP technique) to prevent irreversible occlusion.

Conclusion: MicrelCare can be a useful tool to virtually monitor and predict occlusions and physical assessment) allowed for the determination of pressure range monitoring and the early detection of line stiffness and pre cursors to occlusion.

The Effect of the COVID-19 Pandemic in Intestinal Rehabilitation and Transplant Patients, Initial Results of an International Survey

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Introduction: On January 30, 2020 the World Health Organization (WHO) declared the 2019-CoV outbreak in China as a global public health emergency and subsequently, a pandemic on March 11th. It was considered that intestinal failure and intestinal transplant patients might have a higher risk of severe complications from the COVID-19 disease, multidisciplinary intestinal failure teams had to adapt their clinical approaches in order to keep this vulnerable group of patients as safe as possible during the pandemic; but data was lacking. Therefore, in order to improve our knowledge, we designed a voluntary, international survey aiming to address the impact of the COVID-19 disease in intestinal failure and transplant patients worldwide.

Patient and Methods: A retrospective, observational, multicenter survey was sent to all centers registered at the Intestinal Rehabilitation and Transplant Association (IRTA).

Survey contained three modules: the 1st one consisted of 14 questions about the hospital’s activity during the COVID-19 pandemic. The 2nd one, contained 43 questions, was about intestinal failure patient management and outcome and the 3rd one (52 questions) focused on intestinal transplant patients. We used the Google Form platform. We aim to present the preliminary results of the first module. Statistical analysis was performed with the IBM SPSS Statistic version 25.0® program.

Results: 13/42 (41%) centers responded; including centers from France, Netherlands, Italy, United States, UK, Sweden, Germany and Argentina. Only 2 centers reported moratorium on intestinal (IT) or multivisceral transplant (MVT), with a mean of 3 months (±4) [Table 1]. Since the pandemic started, 2 institutions reported 4 patients with intestinal rehabilitation or on TPN diagnosed with COVID-19 while 7 centers hospitals claimed to have had 9 patients post-IT/MVT affected by the disease. While 7 centers had their routine follow up and “protocol biopsies” in the post-IT/MVT affected, none reported higher rates of rejection or complications. At the same time, 8 centers (77%) were affected by a mean of 15% decrease in referrals for new evaluations of intestinal failure or transplantation (compared to 2019) [Figure 1]. All centers adapted to utilizing telemedicine to follow up on IT/MVT patients.

<table>
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<th>Moratorium for listing patients by center.</th>
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<td>Moratorium</td>
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<td>Patients listed for isolated intestine/non liver-containing graft transplant</td>
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<td>Patients with cirrhosis and a MELD-Na score &lt;20 listed for a multivisceral transplant</td>
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<td>Patients with cirrhosis and a MELD-Na score &gt;20 listed for a MVT</td>
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<td>Patients without cirrhosis and a MELD-Na score &lt;20 listed for a MVT</td>
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<td>Patients without cirrhosis and a MELD-Na score &gt;20 listed for a MVT</td>
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Figure 1. Percentage of centers affected by a reduction in the number of referrals for evaluation in comparison with 2019.

Conclusions: Many aspects of healthcare have been impacted by the COVID-19 pandemic. The survey showed that the number of affected patients has been lower than expected, the reduced number of centers required transient moratorium of their activity, but a secondary observation was that despite the availability of telemedicine, and probably related to the lockdown, there has been a significant reduction in the referrals for evaluation of intestinal failure and transplant patients, that may have the deleterious effect of the delay of treatment in health care system.