

Telemedicine: Maintaining The Control and Clinical Outcomes During COVID-19 Pandemic in an IBD South American Unit with Patient Centered Care

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Received: 30 Nov 2020

Accepted: 22 Dec 2020

Published: 28 Dec 2020

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Citation:

Pérez-Jeldres T, Telemedicine: Maintaining The Control and Clinical Outcomes During COVID-19 Pandemic in an IBD South American Unit with Patient Centered Care. Clinics of Surgery. 2020; 4(3): 1-9.

Keywords:

Inflammatory Bowel Disease; COVID-19; Telemedicine; South America

Abbreviations:

IBD: Inflammatory Bowel Disease; UC: Ulcerative Colitis; CD: Crohn's Disease; TM: Telemedicine; EIMs: Extra-Intestinal Manifestations; PMS: Partial Mayo Score; HBI: Harvey Bradshaw Index; PCR: Polymerase Chain Reaction.

Author Contributions:

TPJ, AEC, WJS, VS, ADV, EA, and MAL for study concept and design; TPJ, AEC, WJS for drafting of manuscript; TPJ, ADV, VS, EA, SE, RS for data acquisition; TPJ, ADV for analysis and interpretation of the data; TPJ, GA statistical analysis; WJS, AEC, MAL, TPJ for critical revision of manuscript. TPJ and AEC, are Co-principal investigator.

1. Abstract

1.1. Introduction: COVID-19 is a global challenge for health systems. The pandemic impacted traditional practice of our hospital's IBD program, favoring the implementation of telemedicine appointments (TM).

1.2. Objectives: To describe and evaluate TM appointment effectiveness in a public IBD center in Chile during the pandemic.

1.3. Methods: IBD patients were evaluated by TM through phone

calls (patients in remission) and video calls (VC) (complicated disease and flares). In the VC group, mean clinical scores (HBI for CD and PMS for UC) were compared at three different times using one-way ANOVA for multiple comparisons, $p < 0.05$.

1.4. Results: A total of 439 IBD patients are followed in our center. From March to July 2020, 204 patients (UC 163; CD 41) were attended by 388 remote controls (phone calls 207, VC 181), with an average of 2 visits per patient (range 1-10). Only 3 remotely attended patients refused attention (3/204); 78% (157/201) stayed

in remission while 22% (44/201) presented with active disease. Of these active patients, 25% (11/44) achieved clinical remission while attended by TM consultation, and 56% (25/44) had an clinical response. Seventy-one patients were treated by VC. Five required in-person monitoring, two emergency referrals, and two hospitalizations. In the UC patient cohort, PMS increased significantly during the pandemic (1.23 vs. 2.68; $p = 0.003$) but had a significant reduction at the end of this study (2.68 vs. 1.6; $p = 0.03$). The same trend in CD was observed. HBI increased during pandemic (3.0 vs. 5.25; $p = 0.089$) but was reduced at the end of the study (5.25 vs. 3.92; $p = 0.0984$).

1.5. Conclusion: TM consultation is a feasible tool to implement to attend IBD patients, achieving good standards of management and disease monitoring.

2. Introduction

COVID-19 has been a major challenge for healthcare systems worldwide, with a growing number of deaths and more than 47 million infected [1, 2]. In South America, the first case was reported on February 26, 2020, whereas in Chile the first patient was confirmed on March 16, 2020. This pandemic led to public health measures in Chile to prevent COVID-19 contagion including a general lockdown in many cities (similar to Italy and Spain) and a restructuring of the public and private healthcare system limiting access into intensive care units and reducing elective consultations to prepare healthcare centers for a high COVID-19 patient admission. This deeply impacted traditional IBD practice in our IBD Unit, characterized by in-person out-patient clinics, toward the rapid implementation of telemedicine (TM) services during this period. Here we describe our experience with TM implementation for IBD management during the pandemic in our patient centered care IBD Unit. The study aimed to evaluate changes in the clinical activity in IBD patients attending TM through video consultation during the pandemic full lockdown in a Chilean IBD Unit.

3. Material and Methods

This prospective cohort observational study was performed in the Hospital San Borja Arriarán, Santiago, Chile. Our hospital belongs to the Chilean Public Health System, has 56 medical specialties, 549 beds (available for the public health network), and an IBD center that cares for controls a total of 439 IBD patients. From March 16, 2020 through July 30, 2020, we suspended all scheduled clinical and endoscopic IBD practice. Patients were evaluated using telehealth for the first time through remote consultations by phone calls (telemonitoring) and telemedicine through telecare (video consultation using Google Meet platform). An IRB approved Informed Consent for TM was signed by each patient through email before the scheduled appointment. The patients also consented for their clinical information to be used for further clinical studies. Pa-

tients were able to contact their medical provider by email as well. From our total of 439 patients, we scheduled TM consultations for 204 patients over four months according to clinical status, disease severity, and the corresponding previous schedule programmed for this year. The remaining patients were rescheduled for the next months.

Phone calls were used to monitor patients in remission. A periodic TM assessment through telecare was needed to monitor flares (mild to severe), patients on biological therapy or patients with an aggressive disease history [3]. According to medical criteria, some patients were assigned to be evaluated in person or sent for hospitalization.

Patients were classified with aggressive phenotypes when they had clinical characteristics associated with a high risk for complications. For Crohn's Disease (CD) patients, aggressive disease was defined by history of hospitalization for flares or disease complications, penetrating/stricturing phenotype, extensive anatomical involvement, perianal and/or severe rectal disease, prior surgery, extra intestinal-manifestations (EIM), or inadequate response to currently available treatments (biological therapy/immunomodulatory) [3, 4]. For Ulcerative Colitis (UC), aggressive disease included patients with frequent flare-ups needing steroids or hospitalization for flares despite optimal treatment (biological and/or immunomodulatory), prior surgery, history of colon cancer, and the presence of EIMs [3, 4]. In both diseases, early age onset and prior anti-TNF failure were also considered aggressive phenotype criteria [3, 4].

Endoscopic procedures were reserved for emergency cases only (upper/lower gastrointestinal bleeding, caustic ingestion, foreign body ingestion, food bolus obstruction, volvulus, gastrointestinal obstruction requiring urgent decompression/stenting, and cholangitis). Other specific measures were implemented such as medication home delivery and isolated infusion treatment units.

We describe the clinical management results of our IBD center during the pandemic period between March 16 to July 30, 2020 through the TM implementation. This period coincides to the full lockdown of the City of Santiago de Chile. The total lockdown mandated people to stay home unless they had to perform essential tasks such as purchasing food or medicine, going to work in essential tasks for the country's operation, or a health emergency. All non-essential tasks required a special permit obtained from a government website to leave home, which could be requested two times a week, allowing no more than 3 hours outside of the home.

We reported our results with a particular focus on the TM through telecare (video calling) group analysis. We describe the clinical activity pre-pandemic and during the pandemic. We also describe new flares (flare in the pandemic), number of patients with activity

before and during the pandemic (persistent activity in pandemic), patients with flares that entered in remission (obtain remission in pandemic), and patients in remission pre- and during pandemic (persistent remission). Additionally, we report COVID-19 cases in our IBD patient cohort, documented by PCR, and deaths during this period.

To evaluate the clinical activity, we used the Harvey Bradshaw Index (HBI) and Partial Mayo Score (PMS) for CD and UC, respectively [5-8]. The decoding Index for HBI activity was defined by remission <5; mild activity (5-7); moderate activity (8-16), and severe activity (>16). Whereas, for UC, we used PMS decoding remission (score 0-1); mild (2-4); moderate (5-7); and severe >7 [5-8].

Changes in clinical scores pre- and in-pandemic (HBI for CD and PMS for UC) were analyzed. Using one-way ANOVA multiple comparison, we compared the means scores at 3 different times (pre-pandemic, highest score in pandemic, and last clinical score calculated during the study), considering $p < 0.05$. An unpaired t-test was utilized to compare two independent variables to determine a significant difference between UC and CD telecare groups. Graphs and analyses were performed using GraphPad Prism 8.

Total number in remission was defined by the number of patients attended by phone calls and telecare who had a clinical score compatible with remission (pre-pandemic and during the entire study) without steroid use and/or need for therapy adjustment.

All patients were treated in a patient-centered care practice that engaged and encouraged patients and their families in the process, focused on providing education and information and used shared decision for treatment decisions during and after TM consultations through telecare sessions by email, phone-calls or new TM sessions, according to the case. At the end of this study, a TM patient satisfaction survey was sent to each patient attended by telecare, in order to evaluate patient experience using this modality. This survey was written in the principal language (Spanish) and based on a previous TM survey [9].

4. Results

A total of 439 IBD patients are followed in our single center (UC=368, CD=71). From March 16 to July 2020, using the telehealth system, we engaged 204 patients (UC 163; CD 41). The mean age was 46 years (range 11-86), with a female-to-male ratio of 65% (n=132)/35%(n=72)132/72. We performed 388 remote visits (TM through telecare=167, call-phone=221). The average TM visit for patients was 2 (range 1-10). Of 204 patients contacted for remote care, 130 were in remission and managed only by phone calls, whereas 71 were evaluated by TM trough telecare. Among the TM through telecare group, five required in-person visits and

three needed hospitalizations. One case went to colonoscopy. New patient appointments were deferred. Only three of 204 patients did not show up for the appointment by TM. Finally, we considered $n = 201$, excluding three patients who did not show up for the appointment. (Table 1) shows the demographic, clinical, and therapeutic history of the patients evaluated under telecare.

A total of 157/201 (78) patients maintained remission whereas 44/201 (22%) had active disease. Of these 44 patients with active disease, 30 had a new flare during this time, whereas 11/44 IBD patients obtained clinical remission during the pandemic and 25/44 decreased their clinical score (clinical improved) (Figure 1).

In 26 active patients, corticosteroids were used to control the flares. In one patient, biological therapy was initiated, and 18 patients required adjustments to their treatment, defined by increasing doses of the current medication. Regarding corticosteroids, none required IV administration; instead, 7 used doses of prednisone under 20 mg and 13 needed doses higher than 20 mg, whereas 6 required local steroids.

Only three patients were diagnosed with the new Coronavirus (PCR). Two were symptomatic, reporting cough, fever, headache, fatigue, loss of smell, and shortness of breath. None required hospitalization for COVID-19, and all had a successful recovery. In these patients, biological therapy was deferred, and azathioprine was stopped temporarily for at least 14 days until patients had a full recovery and negative nasopharyngeal swabs PCR-SARS-CoV-2 test [10].

Two patients were hospitalized for severe IBD symptoms. The first case was a 70-year old female with UC, hospitalized for sigmoid volvulus treatment. The second case was a 17-year-old female diagnosed with colonic Crohn's with perianal disease treated with adalimumab in combination with azathioprine. This patient developed a perianal abscess and during examination under anesthesia the abscess was drained, new non-cutting seton was installed and rectos copy was performed confirming rectal activity. Antibiotics were added to the therapy and adalimumab through levels and antibodies were checked.

Two patients died during this period. The causes were cerebral stroke and the second was of unknown origin. The first case was the 70-year old female mentioned above, who died in the hospital during a stay for sigmoid volvulus treatment with COVID-19 PCR (-), and the second was a 78-year old male with CD who died in the outpatient setting with unknown COVID-19 status.

Seventy-five percent (55/71) replied to the TM patient satisfaction survey, with 96% (53/55) of the patients agreeing to use telecare in the future. (Table supplementary 1 and 2, and Figure S1) show the TM survey answers.

Table 1: Demographic, Clinical Disease Characteristics and Medication History

	Crohn's Disease	Ulcerative Colitis
N	30	41
Age in years (Mean, Min-Max)	40 (17-62)	41 (11-78)
Duration of Disease years (Mean, Min-Max)	10 (0-28)	8 (8-32)
Age at diagnosis in years (Mean, Min-Max)	31 (8-59)	33 (8-78)
Sex (Female/Male)	20/10	26/15
Current smoker (Yes/No/No Data)	0/26/4	7/34/0
History of Surgery (Yes/No)	18-Dec	Apr-37
History Hospitalization for IBD (Yes/No) (Mean,Min-Max)*	30/03. 2 (1-10)	25/16 1.8 (1-5)
Family History IBD (Yes/No)	29-Jan	Apr-37
Montreal UC Extensive Colitis (E3)) Left Colitis (E2) Proctitis (E1)		27 9 5
Montreal Crohn's Disease A1/A2/A3 L1/L2/L3/L4 B1/B2/B3 Perianal disease	4/19/2007 /8/2 6	4/18 19/5/ 11
White Cellsx10⁶/L Normal Range 4.000-11.000 (Mean, Min-Max)	7795 (4270-14200)	7004 (3040-12950)
Hemoglobin (g/L) Normal Range 12-18 (Mean, Min-Max)	12.6 (9.3-16.2)	13.1 (5.9-16.9)
Platelets x10⁶/L Normal Range 150.000-450.000 (Mean, Min-Max)	309000 (190000-787000)	642000 (30.000-309000)
C Reactive Protein (mg/dL) (Normal Range <0.5) Mean, Min-Max	2 (0.20-5.9)	3 (0.31-6.4)
Erythrocyte Sedimentation Rate (mm/hour) Normal Range <30 (Mean, Min-Max)	24 (2-75)	17 (2-64)
Albumin (g/L) Normal Range 3.5-5.5 (Mean, Min-Max)	4.2 (2.6-5.2)	4.2 (1.1-5.2)
Concomitant Medications Immunomodulators ❖ Anti-TNFa Anti-TNFa/Immunomodulators ❖ Salicylates Corticosteroids	3 11 13 0 7	
Naive to anti-TNFa	6	27
History of Anti-TNFa	24	14

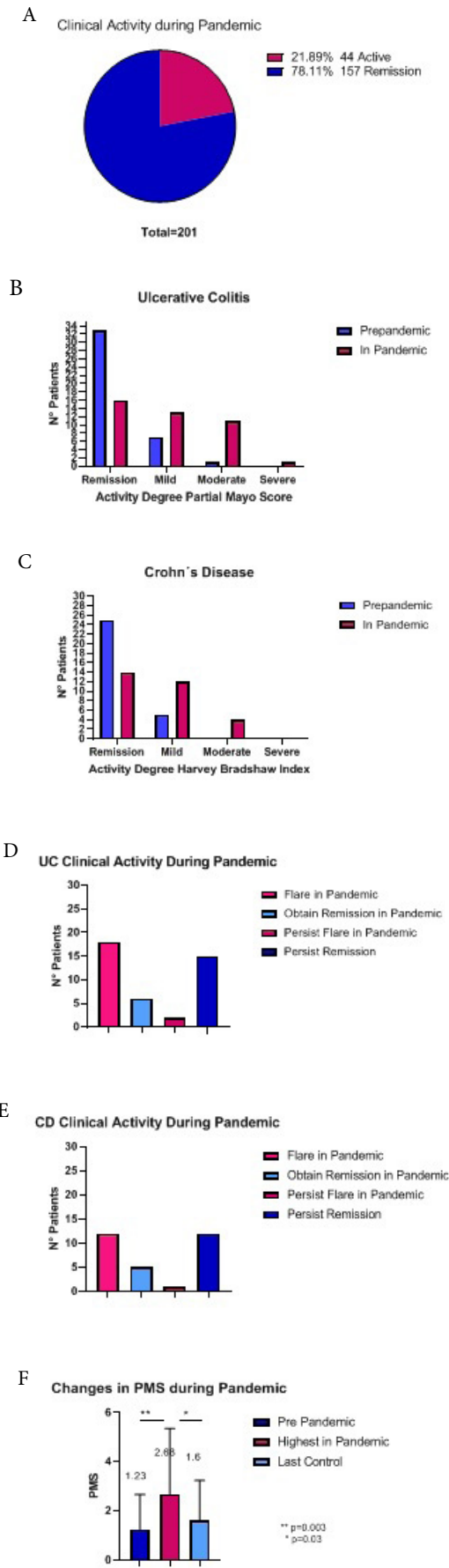


Figure 1: Clinical Activity Degree during Pandemic in the telecare IBD group. A. Clinical Activity Degree in IBD patients during pandemic. Patients in remission were consider the total number of patients attended by call-phone and telecare whom had a clinical score compatible with remission pre-pandemic and during all the study, without steroids treatment and/or need to adjust their therapy. Patients active were patient that during the study had a PMS ≥ 2 and HBI ≥ 5 . B. Changes Activity degree Partial Mayo Score during Pandemic. C. Changes Activity degree HBAI during Pandemic. D. UC Groups according Clinical activity during Pandemic. E. CD groups according Clinical activity during Pandemic. F and G Changes in Clinical score in 3 different times during the study. CD, Crohn's Disease; UC, Ulcerative Colitis; HBI, Harvey Bradshaw Index; PMS, Partial Mayo Score.

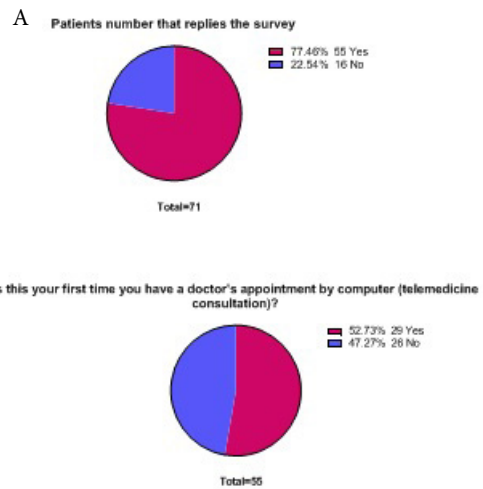


Figure S1: Telemedicine Survey Patient Replies.

5. Discussion

IBD incidence is rising in South America compared to North America and Western Europe, where incidence is stable [11]. Global IBD prevalence has increased the demand for IBD care [12]. Traditionally, IBD care has centered on out-patient and in-person consultation [12]. However, the COVID-19 pandemic challenged the IBD team to implement pre-existing technologies such as telehealth [13]. Telehealth consists of medical information exchanged from one place to another using electronic devices to improve patient's health [14]. Desirable telehealth goals are to improve the patient care experience, reduce the healthcare cost, improve the health of populations [14]. Telehealth tools, technologies and services such as TM consultation are becoming essential components of healthcare systems [14]. Moreover, telehealth appeared an excellent alternative for patients during an airborne pathogen

pandemic with person-to-person transmission.

Chile is among the countries with a higher number of infected per 100K people (2.844 infected per 100Kinhabitants, similar to the USA with 3.414 infected per 100K people on November 16, 2020) [15]. To manage and mitigate the coronavirus spread, we replaced the in-person visits using digital technologies. We provided medical-care remotely using TM and virtual service, similar to other medical centers around the world [13]. Previous to the COVID-19 pandemic, TM in IBD has demonstrated improved outcomes in patients, showing a high rate of early acceptance, but with attrition over time [16]. Moreover, TM has shown to enhance quality of life and therapy adherence while decreasing hospitalization and use

of healthcare institutional resources [16]. Conversely, telephone calls, and electronic encounters increase non-invasive diagnostic tests when compared to standard care [17]. TM includes tele monitoring, where patients are tracked when they are not seen in person using, for example, mobile IBD apps. 18 Other TM forms are telecare (video interaction simulating an office visit), tele-education (educational webinar for providers and patients), teleconsultations (cooperation between providers in different locations such as tele-stroke care or tele-intensive care unit) [18]. Our care center utilized the first two options with 78% of our IBD patients maintaining clinical remission and of our 44 active patients, 25% obtained clinical remission, and 56% had a clinical response while being attended by TM.

Supplementary Table 1:

Telemedicine Survey to Evaluate Patient Satisfaction/Encuesta de Telemedicina para evaluar la Satisfacción del paciente.

Dear Patients: We wish to know how you felt about talking with your doctors and provider using the computer. Please reply to the questions below. We want to give you the best attention possible, and your answers will help us to improve our attention in many aspects/

Please don't sign with your name this question. In advance, many thanks.

Estimados Pacientes: Deseamos saber cómo se sintió conversando con su médicos por computadora. Por favor, responda las siguientes preguntas. Queremos proveerle la mejor atención posible. Sus respuestas nos ayudarán mejorar en muchos aspectos.

Por favor no firme su nombre en esta encuesta. De antemano, muchas gracias.

Is this your first time you have had a doctor's appointment by computer (telemedicine consultation)? Yes No (please circle one)

¿Es la primera vez que usted ha tenido una visita al médico por computadora (consulta de telemedicina)? Sí o No

Please mark the numbers that match how happy you were with the visit:

Por favor marque los números que corresponden a cuán contento(a) estuvo usted con la atención.

	Very Unhappy Muy Contento	Unhappy Descontento	Neutral Neutral	Happy Contento	Very Happy Muy Contento
How well the doctor explained your care plan? ¿Cuán bien le explicó el médico su plan de atención y cuidado?	1	2	3	4	5
How well this visit met your medical care needs? ¿Sus necesidades de atención médica fueron cubiertas en forma adecuada durante la visita?	1	2	3	4	5
How was the overall quality of care you received? ¿Cómo fue la calidad global de la atención que usted recibió?	1	2	3	4	5
How easy it was to talk with the doctor in this way? ¿Cuán fácil fue conversar con el médico por este medio?	1	2	3	4	5
How well you understood the doctor's advice? ¿Entendió correctamente las recomendaciones del médico?	1	2	3	4	5
How well you were able to see the image on the screen? ¿Pudo observar correctamente la imagen en la pantalla?	1	2	3	4	5
How well you were able to hear what the doctor was saying. ¿Pudo escuchar correctamente lo que el médico estaba diciendo?	1	2	3	4	5

How polite and caring the provider(s) from Instituto Chile-Japonés, Hospital San Borja Arriarán were. ¿Cuán corteses y cuidadosos fueron los médicos del Instituto Chile-Japonés, Hospital San Borja Arriarán?	1	2	3	4	5
Your overall feeling about talking with a doctor in this way.Cuál es su impresión general acerca de conversar con un médico de esta manera	1	2	3	4	5

Would you be willing to talk with the doctor in this way again? YES NO (please circle one) How can we make these computer visits better?

What do you suggest to improve this attention by computer

¿Estaría dispuesto(a) a conversar nuevamente con el médico por este medio?

¿Cómo podríamos mejorar estas visitas por computadora?

Table S2: Patient satisfaction response that used Telemedicine (telecare)

Questions	Number of Patients Replies					Total
	Very unhappy	Unhappy	Neutral	Happy	Very Happy	
How well the doctor explained your care plan	2	0	4	16	33	55
How will this visit met your medical care needs.	2	1	4	18	30	55
How was the overall quality of care you received.	2	0	5	11	37	55
How easy it was to talk with the doctor in this way.	2	2	4	18	29	55
How you understood the doctor's advice.	2	0	4	14	35	55
How well you were able to see the image on the screen.	4	2	4	12	3	55
How well you were able to hear what the doctor was saying.	4	1	5	15	30	55
How polite and caring the provider(s) from instituto Chile-Japones, Hospital San Borja Arriaran were.	2	0	5	9	39	55
Your overall feeling about talking with a doctor in this way	1	0	6	12	36	55
Total	21	6	41	125	302	495

Complicated and under flare IBD patients were managed using TM through telecare. In the telecare UC group, 33/41 (80%) were initially under clinical remission. However, during the study, only 39% (16/41) maintained remission. Of the 83% of CD patients initially under remission, 44% (11/25) experienced a new flare. The flares seen in both diseases might reflect the COVID-19 pandemic impact. In UC patients, PMS increased significantly during the pandemic (1.23 vs 2.68; $p = 0.003$), but had a significant reduction at the end of the study (2.68 vs 1.6; $p = 0.03$). The same trend was observed in CD patients. HBI increased during the pandemic (3.0 vs. 5.25; $p = 0.089$), but was reduced at the end of the study (5.25 vs. 3.92; $p = 0.0984$), although not significantly. This reduction in the clinical score reflects the positive impact of TM to treat this group. Moreover, the requirement to stop all non-essential endoscopic procedures surely impacted the assessment of disease activity, and non-invasive monitoring became essential to maintain a treat-to-target strategy [19]. The use of fecal calprotectin and ultrasonography has been proposed as non-invasive tools to assess disease [19]. Unfortunately, calprotectin is not covered by the Chilean public health insurance, and our patients belong to a low

socioeconomic level, making accessibility of this test difficult. The use of calprotectin would be desirable in our study to validate the clinical index activity along with monitoring disease activity [20]. The implementation of non-invasive tools to replace non urgent colonoscopy could prevent diagnostic delay, delay in drug optimization, avoid disease progression, and identify early post-surgery recurrence [19].

During this period, another important role of TM was to deliver recommendations and appropriate information regarding COVID-19 from physicians to patients. This action favored treatment adherence, and encouraged use of protective aids, recommendations for social distancing, staying at home, hand washing hygiene and avoiding unnecessary travel [21]. This effect is reflected in that less than 2% of our patients had COVID-19 infection, and none had severe disease. Despite immunosuppressant therapy, IBD patients have a similar risk for COVID-19 compared to the general population [21, 22]. We reinforced this teaching for our patients, encouraging them to continue their current therapies since no evidence to date suggests an increased risk of SARS-Cov2 infection [21, 22].

Since the pandemic affected IBD patients medically, financially, and psychosocially [22], TM visits provided a global emotional support for our patients. On the other hand, a brief TM visit could work fine for monitoring well-controlled chronic diseases on stable treatment in an engaged IBD group, however, in cases where patients had to confront hard medical decisions, it could be a challenge [23].

The majority of our patients expressed that this was their first experience with TM (53%). A total of 495 answers evaluated the patient's TM satisfaction. The 86% of responses revealed that patients were satisfied with TM. The main complaints were problems seeing images on the screen and hearing the doctor. Despite, these issues, the majority of the patients agreed to telemedicine visits in the future. In addition, patient engagement had a very low no-show rate (3/204).

Prior to the pandemic, telehealth has been studied in various IBD centers. Siegel et al. demonstrated that virtual visits provide a low-cost, convenient care delivery method, decreasing travel time and overall time of visit without compromising the quality [24]. Another Dutch randomized controlled trial (RCT), assigned (1:1) IBD patients to care via standard care (n=444) or by a telemedicine system that monitored and registered disease activity (n=465; my-IBDcoach) [16]. The patients were followed for 12 months. The outpatient visits and hospital admission numbers were significantly lower in the TM group than the standard care group [16]. In both groups, the quality of care scores was similar; both groups had high mean scores [16]. There were no differences between the groups for corticosteroid use, flares, emergency visits, and surgery [16]. In the US, the RCT TELE-IBD was conducted as well [17]. A total of 348 IBD patients were enrolled to assess the impact of tele monitoring in IBD care [17]. Patients with a history of at least one disease flare in the previous two years were eligible for randomization to standard care (n=117) or TM (monitoring via text; EOW=115, weekly=116) [17]. The disease activity and quality of life improved in all groups but without a difference in disease activity through the use of the TELE-IBD system [17]. Nevertheless, the TELE-IBD group experienced a decrease in hospitalization with an associated increase in phone calls, electronic encounters, and non-invasive diagnostic tests [17].

Danese et al., described a TM experience during the COVID-19 pandemic in Italy. In this study a virtual consultation replaced outpatient follow-up clinics resulting in minimal disruption to clinical care, although new patients were deferred [25]. Similar strategies were adopted for other groups [26, 27]. Conversely, in a Brazilian IBD center, most appointments were rescheduled, as a formal TM system was not available and only severe active patients monitored by phone calls [28].

TM advantages include their cost-effectiveness, the ability to ex-

pand access to specialized medical service, and their potential to mitigate doctors' impending shortage [29]. In fact, IBD Chilean reference centers are centralized in Santiago, the capital. Thus, TM could support other centers to improve the IBD quality of care, and in the future, this experience might incorporate other Chilean hospitals [29]. Disadvantages include the need for technological resources that are not available in certain zones, patient data confidentiality, and challenges in developing the physical patient exam. It is crucial to improve these aspects to immerse TM in healthcare attention, being better prepared for future pandemics, and reap this service's benefits [29]. Moreover, a future challenge is international telemedicine (ITM) development. ITM must consider the local medicine regulations, creating international rules to practice this type of medicine in the coming years, improving global medical care.

In conclusion, a rapid restructuring of an IBD Chilean Latin-American Unit during the COVID-19 pandemic shows that TM, medication home delivery, and IBD networking could maintain acceptable care standards in IBD patients [23]. Furthermore, TM links patients to specialty IBD centers and might become an effective strategy to provide multidisciplinary care for patients, allowing care teams and healthcare providers to share additional resources [30]. The use of TM before COVID-19 was limited to the world referral center and health systems with a particular interest in this technology [30]. This pandemic shows that this tool can be implemented in a local IBD center despite the social, health, and economic adversities that accompanied the new coronavirus pandemic, achieving high clinical outcomes, patient experience and satisfaction [30].

6. Disclosures

WS reports research grants from Atlantic Healthcare Limited, Amgen, Genentech, Gilead Sciences, Abbvie, Janssen, Takeda, Lilly, Celgene/Receptos; consulting fees from Abbvie, Allergan, Amgen, Boehringer Ingelheim, Celgene, Conatus, Cosmo, Escalier Biosciences, Ferring, Genentech, Gilead, Gossamer Bio, Janssen, Lilly, Miraca Life Sciences, Nivalis Therapeutics, Novartis Nutrition Science Partners, Oppilan Pharma, Otsuka, Paul Hastings, Pfizer, Precision IBD, Progenity, Prometheus Laboratories, Ritter Pharmaceuticals, Robarts Clinical Trials (owned by Health Academic Research Trust or HART), Salix, Shire, Seres Therapeutics, Sigmoid Biotechnologies, Takeda, Tigenix, Tillotts Pharma, UCB Pharma, Vivelix; and stock options from Ritter Pharmaceuticals, Oppilan Pharma, Escalier Biosciences, Gossamer Bio, Precision IBD, Progenity. AEC reports: honorarium/speaker fees for AbbVie, Janssen, Takeda; consulting fees from AbbVie, Janssen, Takeda. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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