

Continuing care for patients affected by urologic chronic pelvic pain in the era of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) pandemic

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Abstract

Aims: Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) pandemic poses a challenge to treatment of patients with urologic chronic pelvic pain (UCPP), who are at risk to be postponed in the priority of care. We investigated pain, catastrophizing, and psychological status in UCPP patients during SARS-CoV-2 by means of Skype telephone calls.

Methods: A total of 28 UCPP patients underwent Skype video consultations. Pain intensity was assessed with Pain Numerical Rating Scale (PNRS). Pain Catastrophizing Scale (PCS) and Depression Anxiety Stress Scales (DASS-21) were used to assess catastrophizing and psychological status.

Results: During SARS-CoV-2, UCPP patients showed higher intensity of pain than before (mean \pm SD PNRS score: 7.25 ± 0.9 vs. 5.4 ± 0.7 ; $p < .0001$), with pain exacerbation in 75%; they showed higher PCS and DASS-21 scores as compared to before the pandemic (mean \pm SD PCS total score: 32.4 ± 1.2 vs. 23.7 ± 3.5 ; mean \pm SD DASS-21 total score: 42.03 ± 4.5 vs. 34.4 ± 2.2 ; $p < .001$ and $p < .001$, respectively).

Conclusion: During SARS-CoV-2 pandemic UCPP patients presented with high intensity of pain, marked catastrophizing thoughts and severe alteration of the psychological status. These observations impose the need not to postpone assessment and treatment of these patients during the pandemic. Remote visits with video telephone calls are a simple way of continuing care in UCPP patients.

KEYWORDS

anxiety, catastrophizing, chronic pelvic pain, COVID-19, depression, severe acute respiratory syndrome coronavirus-2, stress

1 | INTRODUCTION

The world is currently dominated by the pandemic spread of the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), which has already infected almost

5,900,000 people worldwide, leading to more than 367,000 deaths.¹ Since the beginning of the first infected in Italy, the so-called “Patient Zero” on February 20, 2020, and subsequently in other parts of the world, numerous restrictions have been imposed by Governments to limit

the spread and overcrowding of the intensive care units. On March 11, 2020, World Health Organization declared SARS-CoV-2 a pandemic,² and healthcare professionals immediately realized that this pandemic necessarily would have consequences for the treatment of diseases other than those induced by SARS-CoV-2. In the urologic field, one commonly used strategy has been to postpone appointments for benign conditions and elective surgery, maintaining the provision of urologic care for urgent and neoplastic surgery.³ Indeed, the field of urological care is represented not only by malignancies or urgent needs, which of course must receive the greatest attention and the fastest and most effective cure. The world of urological diseases includes also urologic chronic pelvic pain syndromes (UCPPS) which, although affecting a limited number of patients and not life-threatening, represent a major healthcare problem with social and economic consequences.⁴ In these patients, anxiety, stress, and fear reactions due to the SARS-CoV-2 outbreak could intensify pain experience, with consequent worsening in depression, sleep problems, physical reconditioning, and social isolation.⁵

To assess pain condition, general distress, and catastrophizing in patients affected by UCPP during the dramatic SARS-CoV-2 pandemic, we planned to use a video consultation in place of conventional face-to-face traditional visits, by means of Skype telephone calls.

2 | MATERIALS AND METHODS

The study involved consecutive patients affected by Chronic Prostatitis/Chronic Pelvic Pain (CP/ CPP) and Interstitial Cystitis/Bladder Painful syndrome (IC/BPS), who were regularly followed on an outpatient basis at three Urology Departments and who were waiting for their outpatient visit at the beginning of the SARS-CoV-2 pandemic. Diagnosis of IC/BPS in females was previously performed according to the European Society for the study of IC, with the exclusion of confusable diseases;⁶ in males, the diagnosis of CP/ CPP was performed according to the Consensus Definition and Classification of Prostatitis from the National Institute of Health.⁷

The experimental procedures were carried out in accordance with the Declaration of Helsinki. This research was registered in our clinical audit department (Institutional Review Board). Patients were included in a plan of video consultation by means of Skype video telephone calls which were scheduled to run at least once a week or more times depending on patients' requests.

To assess the impact of pandemic on pelvic pain, pain catastrophizing, and general distress, during the first Skype telephone call patients were asked to complete the

Pain Numerical Rating Scale (PNRS),⁶ the Italian version of Pain Catastrophizing Scale (PCS),⁸ and the Italian version of Depression Anxiety and Stress Scale- short version (Depression Anxiety Stress Scales-21 [DASS-21]).⁹ These instruments, previously administered to our patients during a face-to-face visit, were completed during the call on paper, as self-administered questionnaires, and then they were emailed from patients to doctors.

The PNRS scale is an 11-point numeric scale which ranges from "0" (*no pain*) to "10" (*worst pain imaginable*) and it was used to measure the mean pain intensity of our patients over the last 3 days.⁶ Pain exacerbation was defined as an increase of ≥ 2 on the PNRS from patients' usual background pain score reported at the last follow-up visit,⁹ which was performed in all cases within 3 months before the pandemic.

PCS is a 13-item self-administered questionnaire consisting of three subscales, named "rumination" (with 5 items), "magnification" (with 2 items) and "helplessness about pain" (with 6 items).⁷ Patients were asked to rate the degree to which they have any of the thoughts described in the questionnaire using a 5-point scale (from 0: *not at all*, to 4: *all the time*). PCS scores range from 0 to 52, with higher scores indicating a worst painful experience; total PCS scores above 30 indicate clinically meaningful levels of pain catastrophizing.⁸

The DASS-21 is a measure of general distress plus three additional dimensions which are anxiety (DASS-21-anxiety), depression (DASS-21-depression) and stress (DASS-21-stress).⁹ Specifically, DASS-21-depression scale focuses on mood, motivation, and self-confidence (corresponding items are: 3, 5, 10, 13, 16, 17, 21); DASS-21-anxiety scale focuses on physiological excitation, panic, and fear (items: 2, 4, 7, 9, 15, 19, 20) and DASS-21-stress scale focuses on tension and irritability (items: 1, 6, 8, 11, 12, 14, 18). Each item in the three scales is rated from 0 to 3 (0 = *it never happened to me*; 3 = *it happened to me almost always*). To obtain equivalent scores to the full version of the scale, named DASS-42,¹⁰ the total score of each scale can be multiplied by two and scores range from 0 to 42. To calculate DASS-21 total score which corresponds to "general distress," final scores of subscales are summed, with higher scores indicating more severe level of depression, anxiety, and stress. Threshold values for depression, anxiety, and stress case were set at ≥ 10 , ≥ 8 , and ≥ 15 respectively.^{10,11}

2.1 | Statistics

Statistical analysis was performed with IBM-SPSS v.17 for Windows (IBM Corp). The Student *t* test and the Mann-Whitney *U* test were performed to compare

continuous parametric and nonparametric variables, as appropriate. Continuous variables were reported as mean \pm *SD*. All values in the text and tables are expressed as mean \pm *SD*. Statistically significant results were $p \leq .01$. Spearman correlations were used to test for the strength of linear association between variables along with the Wilcoxon and Mann–Whitney.

3 | RESULTS

3.1 | Patients demographics

From the end of March 2020 to the end of April 2020, 28 patients affected by UCPP (18 females and 10 males) underwent Skype telephone visit modality. All patients were assuming pharmacological treatments for their painful condition according to a multimodal treatment regimen based on the UPOINT system, including antimuscarinics, antidepressants, pregabalin, alpha-blockers, palmitoylethanolamide/polydatin, in different combination modalities. Characteristics of patients are shown in Table 1.

With regard to PNRS evaluation during the pandemic, the mean \pm *SD* score was 7.25 ± 0.9 (7.7 ± 1.1 in males and 7.0 ± 1.1 in females) and it was significantly higher than that recorded during the last visit 3 months before the pandemic: 5.4 ± 0.7 versus 7.2 ± 1.1 ($p < .0001$). The

TABLE 1 Demographics of urologic chronic pelvic pain (UCPP) patients who underwent continuing care with Skype telephone calls during severe acute respiratory syndrome coronavirus-2 (Sars-CoV-2) pandemic

Variables	UCPP patients
No. of patients	28
Age (mean \pm <i>SD</i>)	47.21 ± 10.53
Sex (M/F)	10/18
Disease duration (years; mean \pm <i>SD</i>)	7.81 ± 7.52
Education (No. of pts)	
• Compulsory	4
• Further education	15
• Higher education	9
Marital status (No. of pts)	
• Married	13
• Single	6
• Divorced	9
Working status	
Worker (No. of pts)	18
Jobless “ “	9
Retired “ “	1

mean \pm PNRS ≥ 2 -point increase, as indicative of pain exacerbation, was detected in 21/28 patients (75%), and specifically in 12 IC/BPS women and in 9 CP/CPM males.

When considering the results of PCS scale, the mean \pm *SD* total score was 32.4 ± 1.2 , indicating a strong painful experience. Higher scores were observed for item 6, indicative of “helplessness,” items 8, 9, 10, 11, indicative of “rumination” and item 13, indicative of “magnification” (Table 2); these scores were significantly higher as compared to those detected before the pandemic (Table 2). No significant differences were identified between males and females on PCS items. PCS total score measured during the pandemic was significantly higher as compared with that previously obtained during the last visit, 3 months before the SARS-CoV-2 emergence: 32.4 ± 1.2 versus 23.7 ± 3.5 , respectively ($p < .001$).

Table 3 shows the results of the three subscales of DASS-21, and DASS-21 total score (3 months before and during the pandemic). In addition, Table 3 also describes DASS-21 sub-scores in patients with ≥ 2 -point increase in PNRS. Mean \pm *SD* scores for each DASS-21 subscale were significantly higher during the pandemic as compared to those detected before the pandemic, with patients being highly affected by depression, stress, and anxiety (Table 3). Interestingly, DASS-21 depression and stress scores were significantly higher in UCPP patients during the pandemic as compared to those obtained during the last visit performed in all cases 3 months before the beginning of it. When considering patients with pain exacerbation, higher scores mainly related to anxiety and stress were detected, in comparison with patients without pain exacerbation. Overall, 17/28 (60.7%) patients required to undergo a review of their pharmacological treatment.

4 | DISCUSSION

Due to the SARS-CoV-2 pandemic spread, most out-patient facilities have been strictly regulated also in the field of Urology, thus making it difficult for many patients with benign diseases to access treatment. In this regard, in the recently published recommendations of the European Association of Urology Guidelines about urologic treatments in the SARS-CoV-2, patients affected by UCPP are considered as “low priority category, with clinical harm very unlikely if postponed 6 months.”³ Indeed, postponing counseling of UCPP cases could not be free from severe consequences for patients so deeply affected by their pathology. It is well known that chronic pain is one of the most significant causes of suffering and disability worldwide, with a profound impact on the quality of life (QoL) and with physical, psychological, and social consequences. It can lead to reduced mobility, loss

TABLE 2 Pain Catastrophizing Scale: items most affected in 10 males and 18 females with urologic chronic pelvic pain before and during the SARS-CoV2-Pandemic

PCS Item No.	PCS type of item	UCPP males before		UCPP males during		UCPP females before		UCPP females during		p* Level
		SARS-CoV-2 (mean ± SD)	SARS-CoV-2 (mean ± SD)	SARS-CoV-2 (mean ± SD)	SARS-CoV-2 (mean ± SD)	SARS-CoV-2 (mean ± SD)	SARS-CoV-2 (mean ± SD)			
6. Helplessness	I become afraid that the pain will get worse	1.6 ± 0.4	2.8 ± 0.4	2.5 ± 0.5	1.3 ± 0.3	.000	2.5 ± 0.5	.000		
8. Rumination	I anxiously want the pain to go away	1.8 ± 0.3	3.1 ± 0.5	3.4 ± 0.5	1.9 ± 0.4	.000	3.4 ± 0.5	.000		
9. Rumination	I can't seem to keep it out of my mind	2.1 ± 0.1	3.2 ± 0.4	3.3 ± 0.5	2.0 ± 0.2	.000	3.3 ± 0.5	.000		
10. Rumination	I keep thinking about how much it hurts	1.9 ± 0.5	3.3 ± 0.5	3.6 ± 0.5	1.8 ± 0.5	.000	3.6 ± 0.5	.000		
11. Rumination	I keep thinking about how badly I want the pain to stop	2.0 ± 0.3	3.3 ± 0.5	3.5 ± 0.5	2.1 ± 0.6	.000	3.5 ± 0.5	.000		
13. Magnification	I wonder whether something serious may happen	1.8 ± 0.7	3.1 ± 0.4	3.2 ± 0.5	1.9 ± 0.4	.000	3.2 ± 0.5	.000		

Note: p = comparison among males before and during SARS-CoV-2; p* = comparison among females before and during SARS-CoV-2. Abbreviations: Sars-CoV-2, severe acute respiratory syndrome coronavirus-2; UCPP, urologic chronic pelvic pain.

TABLE 3 Depression Anxiety Stress Scales-21 (DASS-2) subscales scores in urologic chronic pelvic pain (UCPPS) patients before and during the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) Pandemic

DASS-21 subscales	Total UCPP pts (before SARS-CoV-2; No. 28, mean \pm SD)	Total UCPP pts (during SARS-CoV-2; No. 28, mean \pm SD)	UCPP pts with more than 2 PNRS increase (during SARS-CoV-2; No. 21, mean \pm SD)
Mean age	47.2 \pm 10.7	47.2 \pm 10.7	47.8 \pm 11.4
Depression score	12.8 \pm 3.1	16.4 \pm 2.3*	10.6 \pm 3.8
Anxiety score	9.6 \pm 3.6	10.3 \pm 3.5	16.5 \pm 1.9
Stress score	11.3 \pm 2.7	15.2 \pm 2.0*	15.6 \pm 2.1
Total score: General distress	34.4 \pm 2.2	42.03 \pm 4.5*	43.7 \pm 5.1

Note: *Between UCPP patients before and during the SARS-CoV-2 pandemic: $p < .05$

of strength, alteration of the immune system and it can affect the ability to sleep, concentrate, and interact with others.^{4,5} For all these aspects, pain relief is considered a human right.¹³ In addition, it has been reported that people living with chronic pain and waiting for assessment, often complain of more severe depression and suicidal thoughts, with deteriorating health-related QoL in those waiting over 6 months.^{12,14,15} For all these reasons we retained essential to continuously ensure caring for patients with UCPP during a so difficult time of SARS-CoV-2 pandemic.

In the present study, Skype video calls have been used as an alternative modality for delivering care in patients with UCPP, who were waiting for a medical consultation in the period of the lockdown due to the Sars-CoV-2 pandemic. At the beginning of the study, we could not be sure that the proposed modality would have been accepted and carried on by the patients. Satisfactorily, Skype consultations were well-accepted by our patients and none decided to stop them along the study period.

The results in the present study showed that during the pandemic, UCPP patients presented with marked intensity of pelvic pain as showed at PNRS evaluation, which was significantly higher as compared to that recorded in their last follow-up visit before the pandemic; additionally, pain exacerbation was noted in 75% of cases. Also, high scores of catastrophizing were detected in UCPP patients (significantly increased as compared to before the pandemic), particularly those scores indicative of "rumination," a condition known to be implicated in the emergence, maintenance, and worsening of both depressive symptoms and general anxiety.¹⁶ Rumination, but also helplessness about pain and magnification were all affected in UCPP patients in the present study, thus indicating negative cognitive and emotional responses and poor adjustment in the dramatic period of SARS-CoV-2 pandemic. Worth of noting, the observed PCS scores in these patients during SARS-CoV-2 were

somewhat higher than those previously reported in the literature,^{17,18} presumably because detected in a dramatic period not previously worldwide reported. When considering the DASS-21 questionnaire, we found a marked general distress, high depression, and anxiety scores, which confirms the great suffering and the high vulnerability of individuals affected by chronic pelvic pain in front of the emergency situation created by the pandemic. The finding of higher anxiety and stress levels at DASS-21 in the patients with pain exacerbation was in line with the previously observed association between anxiety and lower pain thresholds in chronic pain states.¹⁹ Questionnaires in our study were filled during the call, thus one potential bias could have been represented by the presence of medical personnel. Indeed, during the telephone call, patients undergo self-administered questionnaires, which took a few minutes to be completed, while remaining alone and no interference was applied by medical personnel. In recent times, the literature showed that with the use of smartphones (mobile-Health) less time is taken to fill out questionnaires and diaries, and prompts can be sent throughout the day to collect a greater range of data at more regular intervals.²⁰ Worth of noting, about 60% of UCPP patients, as a consequence, required treatment modifications to better control their pain condition. Certainly, it would have been more interesting to have a control group represented by patients affected by BPS that could not receive medical consultations during the SARS-CoV2 pandemics, evaluating both the effect of the pandemic and of the lack of medical consultations in such a fragile population. The results of the present study, although obtained in a limited number of patients, confirmed our hypothesis that the SARS-CoV-2 outbreak could have highlighted the need of UCPP patients to be closely followed-up. We were able to apply a continuing care with the simple use of Skype telephone calls to replace face to face visits, thus showing that it is possible to apply

alternative modalities for taking care of patients with UCPP. It may be asked whether virtual visits are equal to in-person visits and whether frequent follow-up reduces pain and anxiety in people with chronic pelvic pain or on the contrary, due to this unusual medical setting, patients could have experienced more anxiety and stress. From the results of this study, information about the benefits of virtual consultations in UCPP patients cannot be provided. To answer this question, prospective, non-inferiority or equivalence, randomized studies comparing remote consultations with face-to-face visits would be required, what was not possible for us to perform during the Sars-Cov-2 pandemic. The use of telemedicine in chronic pain already exists and it is usually focused on psychological interventions, exercise, and mindfulness-based stress reduction therapies. Various systematic reviews showed a reduction in pain, disability, depression, and anxiety in intervention groups compared to controls (usual care or waitlisted).^{21,22} In addition, it has been observed that virtual outpatient consultations effectively relieved patients' anxiety during the SARS-CoV-2 outbreak.²³ Whether a more frequent follow-up on its own could reduce symptoms and anxiety in patients with pelvic pain is not clear, but it has been reported that a close patient-physician relationship, effective communication, and indeed empathy are valued most highly by patients with chronic pain.²⁴ In addition, it can be noted that a variety of treatments for chronic pain which require multiple and close treatment sessions, including cognitive behavioral therapy, emotional awareness, and expression therapy, and myofascial trigger point release, have been proved to be very useful also in patients with pelvic pain.^{25,26}

Nevertheless, we retain that physical examination, laboratory, and instrumental tests cannot be replaced by virtual consultations, particularly when the patient comes to visit for the first time, or when there is the need to face up to a relevant medical condition. In addition, multiple virtual consultations along with long-term follow-up may not be affordable in normal, every-day practice. In our study, frequent medical Skype consultations, even more than once a week, were related to the fact that about 60% of patients required to undergo a review of their pharmacological treatment, due to a worsening of symptoms during the pandemic. Indeed, many of our patients with pain currently continue to be followed by Skype video calls, according to the specific and individual need, due to also the slow recovery of normal activity in our center. Although this pathologic condition is not life-threatening, the results in the present study showed that the care and medical cure of these patients cannot be postponed. Probably, more advanced technologies could provide easier and more adequate

opportunities to deliver remote help for these patients.²⁷ Indeed, in recent times web-based technologies have been implemented for people with pain, with the aim to allow clinicians to review outcome measures before patients' appointments, but also to adequately perform a history and specific interviews and evaluations.²⁸ Standardization of telemedicine and digital treatments also in this field of cure, due to the uncertainty of the future, appears to be really an urgent need.

5 | CONCLUSIONS

In the emergency period of the SARS-CoV-2 pandemic, patients affected by UCPP had pain exacerbation, worsening of the psychological status, and marked and increased general distress and need for a continuous counseling. It was possible to offer continuing care in these vulnerable and deeply suffering patients with a remote counseling by simple Skype video telephone calls.

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