Case report

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Misophonia in Urological Patients: Our Experience of Management

Oleg Banyra[1,2], Oxana Jourkiv[3], Oleg Nikitin[4], Iryna Ventskivska[5], Zvenyslava Kechur[6], Viacheslav Didkovskiy[7]

[1]Department of Urology, St. Paraskeva Medical Centre, Lviv, Ukraine, [2]Department of Surgery, 2nd Lviv Municipal Polyclinic, Lviv, Ukraine, [3]Child and Family Counseling Group, P.L.C., Fairfax, VA, United States of America, [4]Department of Urology, Bogomolets National Medical University, Kyiv, Ukraine, [5]Department of Gynecology, Bogomolets National Medical University, Kyiv, Ukraine, [6]Psychiatrist, Psychotherapeutist, St. Paraskeva Medical Centre, Lviv, Ukraine, [7]Department of Otorhinolaryngology, Bogomolets National Medical University, Kyiv, Ukraine

Abstract - This case report presents five patients suffering from recurrent chronic urological inflammatory diseases and adverse sound sensitivity. Unifying psychological feature of all presented patients is their intolerance of usual bodily sounds produced by partners and other people, called "misophonia", which makes long-term relationships impossible. In our sample, despite psychiatric care, misophonic symptoms have not ceased completely. Patients continued to practice partner avoidance, with frequent changes of sexual partners or long-term abstinence. Consequently, frequently unprotected sexual contacts caused new sexually transmitted diseases, combined with recurrences of chronic prostatitis/cystitis, while abstinence led to chronic nonbacterial (congestive) prostatitis. It looks like misophonia complicates the ability to maintain long-term sexual relationships that might influence urological status in sufferers. Better understanding of misophonia, its coping mechanisms and the hypothetical indirect contribution of misophonia-related behaviour to urological pathology could be possible only after future multidisciplinary investigations with larger statistically significant number of enrolled patients.

Keywords: misophonia; cognitive behavioral therapy; relationships; cystitis; prostatitis; sexually transmitted diseases

e-mail: apr.kbcsm@gmail.com • www.http://apr.kbcsm.hr

Introduction

Unfortunately, numerous new health disorders appear at the same time with the development of civilization, scientific progress and contemporary forms of communication. Recently there were described some behavioural abnormalities, the aetiology, pathogenesis and their essence that we still have to establish and try to recognize. The influence of Relationship Obsessive Compulsive Disorder (ROCD), pathological gambling, internet gaming, Facebook Addiction Disorder on everyday social and private life in sufferers has being studied [1-4].

Not long ago there were numerous publications illustrating principally new condition of unknown aetiology called "Misophonia". It is characterized predominantly by the presence of strong negative emotions in response

Correspondence to:
Oleg Banyra, MD
Department: Department of Urology
Institute/University/Hospital: St. Paraskeva Medical Centre
Zavodska Street, 7, 79019, Lviv, Ukraine
Phone: +380 9 50366366
E-mail: banyra@onet.eu

to some bodily sounds of other people (chewing, lip smacking, snoring, breathing etc.). Misophonia even covers a broader spectrum of sounds than just bodily/physiological ones: repetitive tapping, high-pitched noises or the sound of scraping cutlery, pen clicking etc. This disorder is usually associated with significant problems in occupational, social and family performance. Special internet resources contain anonymous posts from misophonia sufferers where the difficulties or even destruction of close relationships and problems in intimate life are the main complaints [5-9]. Different concomitant personality disorders might be registered in misophonics that worsen the symptoms [10]. Despite of the newness about this problem for most doctors in general practice, at present time a real number of individuals with misophonia may be more than it seems at first glance. Approximately 6% of the young and healthy Chinese university students demonstrated clinically significant misophonic symptoms with specific impairment [11]. The prevalence of misophonics among patients with depression may be 8.5% [12]. In our 30 years of medical practice we have only recently encountered that new mental pathology and have no the great skills for its management. The features of medical care in urological patients with misophonia have never been investigated before.

The aim of the current study was to present own experience and management of the five patients with urological pathology and misophonia, report features of each case, analyse efficacy of treatment and perform a relevant review of literature.

Subjects and Methods

The article presents a clinical description of the five young patients with urological pathology and misophonia. During diagnostic work-up and treatment, standard clinical methods were used. An anamnestic investigation revealed the presence of misophonia.

Differential diagnosis with other hearing disorders such as tinnitus, hyperacusis etc. was performed by conducting of audiometric tests with otorhinolaryngologist/audiologist counselling. To confirm misophonia and its severity we have used the Amsterdam Misophonia Scale (A-MISO-S) that was adapted linguistically by a professional linguist [13]. The patients were informed about absence of approved strict criteria for misophonia diagnosis as well as a lack of evidence-based effective treatment options, so we had the permissions for experimental examining and treatment in the current situation. Pharmacotherapy and cognitive behavioural therapy (CBT) were performed based on preliminary evidence of CBT efficacy in misophonics [14,15].

CBT treatments were administered by a psychiatrist who was a psychotherapist too. The main goal of all psychotherapeutic sessions was to make the patient tolerable to sound triggers without converting his/her behaviour into avoidance or aggression toward the triggering person. Psychotherapist was aiming to destroy the specific misophonic "vicious cycle" (sound trigger =>> negative thoughts =>> negative emotions =>> more evaluative thoughts and feelings =>> adverse emotional reaction =>> exacerbation of negative feelings about the trigger source =>> behavioural reactions: aggression or "fight or fly response" directed to the trigger source) by helping the sufferer to explore own negative thought processes and to adapt them [15].

CBT was divided in to two intervals: the initial treatment and follow-up sessions. The aim of the initial "introduction" session was to explain patient about misophonia, its features and align person with CBT. At the 2nd session named "hierarchy construction" patient had to create his/her own list of triggers with construction of triggers hierarchy scale from the most irritating to the smallest of them. Thereafter, the patient was exposed to impact of repetitive annoying triggering sounds with response prevention technique. Participants were habituated by distress related with their unique triggers and inspired that negative emotions like anger, hatred or disgust as well as their imperative actions like avoidance or even aggression towards to trigger source are not reasoned way out of situation mandatory to alleviate distress. Triggers and exposures were titrated higher in loudness based on subjective physical and mental condition and gauged strictly according to the individual personal irritation grade. Cognitive restructuring of the aberrant beliefs was aimed to achieve eg. "My family member, partner, spouse, roommate made this sound on purpose to annoy me" was reorganised and remodelled into "All that I hear from persons including the annoying sounds are just usual bodily noises and physiology of surrounding people. Because of I loving (want to live with) them I have a chance to practice exposures and improve myself" [16,17]. Patient 1 received 14 CBT

sessions during 16 weeks, Patient 2 – 15 sessions during 18 weeks and Patient 3 – 16 sessions during 19 weeks, Patient 4 – 15 sessions during 17 weeks, Patient 5 – 14 sessions during 15 weeks.

The treatment response was defined by laboratory analyses in two and six weeks after finish of antibacterial treatment and as a differences between A-MISO-S scores before CBT and at the end of sessions. Written informed consent was obtained from all patients for publication of these case reports and any accompanying anonymous information.

Results

Patient one

A 28-year-old man presented to the urological office complaining of suprapubic pain, feelings of incomplete urination, burning sensation after ejaculation, insufficient erections and urinary urgency. Anamnestic investigation established that during last 5 years patient had irregular sexual life with more than 20 females. He informed his doctor about complexity of living together with a partner due to constant provocation by specific human sounds (chewing, lip smacking, eating with an open mouth and loud breathing) that lead to intense rage, disgust, anger and avoiding finally.

The first onset of misophonic reactions occurred at the age of 14. During family dinner, patient experienced annoyance by his father's chewing. With time, intensity of negative emotions has increased and new triggers have joined. The level of irritation was not constant and varied in different situations. Triggering sounds that were coming predominantly from strangers were neutral and less irritating, while the same sounds produced by family members or girlfriends were causing severe annoyance and rage.

At the time of initial assessment, he was generally healthy, and his systemic examination was normal. Polymerase chain reaction (PCR) showed presence of two sexually transmitted diseases (STDs): chlamydiosis and ureaplasmosis. The patient was diagnosed with chronic prostatitis, chronic urethritis, chlamydiosis, ureaplasmosis.

His initial A-MISO-S score was 13 points. However, according to the patient, intensity of negative emotions varied in different situations. During familiarization with a list of questions patient resumed that sometimes his reaction to special triggers became more intensive, especially in subscales 6, 4 and 2 concerning to roommates or girl-friends. In that situation total A-MISO-S score could increase to 14-15 points. The patient had informed us that he felt an increase of the intense negative emotions after regular coffee intake. During sexual intercourse he had just could not ignore the ambient sounds produced by his partner (lip smacking and loud breathing). Interestingly, specific sounds that occur during sex did not trigger misophonic reaction at the beginning of relationships with a new partner, while after 2-3 weeks it did.

The breakup of the relationship mainly occurred on the patient's initiative due to his "inability to stay in constant stress by waiting for trigger sounds or hearing them".

When we have asked, "Would the relationship with each abandoned partner last longer if she did not produce trigger sounds?" the patient answered "YES". The question: "Would you so often terminate the relationships if you did not have the misophonia?" he answered – "Probably NOT".

He had an antibacterial treatment combined with course of CBT. During his follow-up, the patient demonstrated a decreasing of urinary symptoms. Control tests after treatment were negative. However, his sexual life had not stabilized because of remained negative emotions that were induced by the next partner's trigger sounds despite of her attraction. At the endpoint A-MISO-S score was 8 points, with reduction of 38.5%. Patient was not able to find girlfriend for stable relationships and that forced him to a frequent partner's change. The patient had not always practiced protected intercourse (condoms) because of situation, own reluctance or partners wish. Consequently, after 8 months from his first visit he turned to our clinic again with trichomoniasis.

Patient two

Other patient, 29-year-old female, was referred by a gynaecologist to urological office with complains on urinary urgency, frequency and suprapubic pain. She suffers from chronic cervicitis and cystitis for 7 years. During that period, numerous STDs were revealed. The patient could not tolerate the usual bodily sounds that were produced by her boyfriends (chewing, snoring, sounds of fork on a plate or teeth, throat clearing, tapping noises, deep breathing etc.) and reacted to them with intensive rage, thereby she was not able to stay in long-term relationships and had more than 15 sexual partners for last 3 years.

The patient was diagnosed with chronic cystitis, chlamydiosis. She was given a 14-days course of oral Doxycycline (100 mg BD). The psychiatric diagnosis of ROCD, depression and misophonia was made. Initial A-MISO-S score at visit to clinic was 16 points.

The patient's first onset of misophonic reactions occurred at age of 13 y.o. Patient had felt irritation of grandmother's chewing at the holiday family gathering. Thereafter, the level of negative emotions became higher. New triggers appeared time after time.

The patient had informed us that increased coffee intake and insomnia were provoking her misophonic symptoms more while low-doses of alcohol were decreasing them. Moreover, she had noted that severity of misophonic symptoms in subscales 2, 3 and 6 A-MISO-S questionnaire had varied significantly. The level of her responses was depending on the situation and a specific person who was producing provoking sounds. Close people (roommates, family members and boyfriends especially) provoked intense rage, while the same sounds produced by strangers or co-workers are usually less harmful. Interest enough the Patient two has had lower irritation at the "honeymoon" period followed by its increasing intensity of irritation and anger over the dating time and long-term relationships with same boy-friend. In similar ways like with the first described patient, specific sounds that had occur during intimacy: moans and deep breathing had triggered intense misophonic reactions too.

Similar to the Patient one, the breakup of the relationship mainly occurred due to the second patient's initiative because of her "reluctance to be in constant stress by hearing the partner's trigger sounds".

When we had asked "Would the relationship with each abandoned partner last longer if he did not produce trigger sounds?" the answer was "YES". The question: "Would you so often terminate the relationships if you did not have the misophonia?", her answer was – "Unambiguously NOT".

Pharmacotherapy combined with course of CBT was prescribed.

During a follow-up, the patient demonstrated termination of her urinary symptoms. The PCR, urinalysis and microbiological cultures taken two and six weeks after treatment were negative. The A-MISO-S score at the end of CBT was 11 points, with reduction of 31.2%. However, 7 months after the completed treatment Patient two had experienced re-attack of cystitis caused by Ureaplasma urealyticum. Until the re-visit patient's sexual life had not stabilized because of her negative emotions that were induced by her next boyfriend's trigger sounds. Therefore, she has still practiced occasional sex with different partners, and often unprotected.

Patient three

The third patient was a 31 year old man who visited urological office with complains of urinary urgency, frequency, suprapubic pain and paresthesia in genital area.

The history of present/past illnesses established that during the last 7 years his sexual life was extremely irregular. The patient had informed us about complication of maintaining a long-term relationship with his girl-friends because of his intense disgust and provoked rage by hearing of partner's human sounds such as chewing, lip smacking, sounds of eating mouth open and irregular breathing.

The first signs of misophonia third patient had experienced at age of 11. He had remembered an intensive disgust and an imperative desire to leave the kitchen when noticed mother's chewing at the family dinner. As a time went by, intensity of negative emotions has increased and a list of triggers has widened. The level of negative emotions was unstable and differed greatly depending on the circumstances and people producing trigger sounds. Similar to patients one and two, annoying sounds from strangers were disturbing him less than the same sounds from sexual partners or family members.

The breakups of the relationships occurred on the patient's initiative because of his "annoyance induced by trigger sounds or awaiting anxiety to hear them". After breakups, he had experienced long periods of abstinence for 5-13 months. Then the patient tried to create new relationships but was not able to maintain them because of misophonic reactions induced by his next girlfriend's triggering sounds.

When we asked, "Would the relationship with each abandoned partner last longer if she did not produce trigger sounds?" the patient answered "YES". The question: „Would you terminate the relationships if you did not have the misophonia? " he answered –"Probably NOT".

The patient's initial A-MISO-S score was 18 points. The PCR showed absence of STDs. The patient was diagnosed with chronic nonbacterial prostatitis and misophonia. Accordingly, the patient was given a 14-day course of anti-inflammatory therapy and long-term CBT.

During the patient's follow-up, he demonstrated a decrease of his urinary symptoms. Control analyses were normal. However, his sexual life did not stabilize because of negative feelings that were provoked by next girlfriend's trigger sounds despite of her attractiveness. At the endpoint A-MISO-S score was 11 points, with reduction of 38.9%. Patient was not able to create new constant relationships and still practiced avoidance. Consequently, after 4 months from his first visit he came to urologist again with re-attack of nonbacterial (congestive) prostatitis.

Patient four

Next patient, 26-year-old female was referred by a gynaecologist to urological office with complains on subfebrile body temperature, gross haematuria, urinary urgency, frequency and suprapubic pain. She suffers from pelvic inflammatory disease, chronic cervicitis and cystitis for 5 years. The onset of cystitis coincided with the detection of Chlamydia trachomatis when she was 21. Afterwards the patient was repeatedly diagnosed with different STDs. Like first three patients, Patient four did not tolerate common bodily sounds that were produced by her boyfriends (chewing, throat clearing, snoring, sounds of fork on a plate, irregular or deep breathing, yawning). That is why she was unable to stay in constant long-lasting close relationships and had 13 sexual partners during last three years.

The patient was diagnosed with chronic cystitis, pelvic inflammatory disease, cervicitis, mycoplasmosis, ureaplasmosis. She was treated with a 14-day course of oral Josamycin (1000 mg BD). She was also diagnosed with obsessive compulsive disorder with anxiety and misophonia. The Initial A-MISO-S score was 17 points.

The first experience of misophonic response she experienced at age of 12. She felt annoyance and disgust during family supper when her brother chewed too loudly. Soon, the grade of negative feelings has increased and she noted new triggers with a length of time. The grade of annoyance had varied in different situations. Coffee or green tea intake, psychological overload and insomnia provoked exacerbation of her misophonic reaction while long sleep and rest, low-doses of alcohol reduced them.

She reported that intensity of symptoms in subscales 2, 4 and 6 A-MISO-S may differ greatly and depends on the person that produced triggers. People who have closer

communication (family members and partners especially) caused more intensive annoyance and intense rage, while the same sounds from strangers or co-workers were usually less harmful. Patient informed that specific sounds that are producing during intercourse annoyed her less than eating or breathing triggers.

Opposite to the first three patients, the relationships were broken not only on the fourth patient's initiative. A part of her boyfriends left her because of her constant control over their physiological behaviour and a ban on producing certain sounds that was impossible for them and made the life complicated together. She informed that one of her partners told about "his reluctance to be the trigger and unwillingness to feel guilty for the exacerbation of her pathological emotions".

When we have asked: "Would the relationship with each abandoned partner last longer if he did not produce trigger sounds?" the patient answered "Probably YES". The question: "Would you so often terminate the relationships if you did not have the misophonia?" she answered - "I think NOT".

She had a pharmacological treatment combined with course of CBT.

During her follow-up, the patient four demonstrated relief of urinary symptoms. PCR, urinalysis and microbiological cultures taken at the endpoint were normal. The A-MISO-S score at the end of CBT was 11 points, with reduction of 35.3%. However, six months after completed treatment she visited the clinic with exacerbation of chronic cystitis caused by Chlamydia trachomatis. Until then she has not found a constant sexual partner. That is why she continued the practice of occasional sexual contacts with new partners, sometimes unprotected.

Patient five

The fifth patient came to the urological office with complains on dysuria, urinary urgency, frequency and suprapubic pain. She was a 22-year-old female who was a second year university student. She also told the urologist about symptoms of misophonia, history of depression, anxiety, and exacerbation of trichotillomania. She resided in an apartment with two roommates. The patient reported that staying busy with her academics helps her depressive symptoms that recently have not been an issue. She described her mood as neutral and happy.

The patient's anxiety presents in a specific circumstance: around mealtimes and at school during specific assignments and projects when she hears specific triggers: chewing sounds, sounds of fork on a plate, slurping, pen-clicking. In the past, exposure lead to occasional panic attacks: overwhelming moments when she could not catch her breath. Because she was triggered by the chewing sounds her sexual partners made she was not able to maintain long-lasting close relationships and changed boyfriends frequently, with over ten partners during the last three years.

The patient was diagnosed with acute cystitis, cervicitis, mycoplasmosis. She was treated with a 12-day course of oral Josamycin (1000 mg BD). She was diagnosed with an obsessive-compulsive disorder with anxiety, trichotillomania, depression and misophonia. The initial A-MISO-S score was 18 points.

The onset of misophonic reaction she experienced at the age of 10. She has fell anxiety and disgust during holiday family dinner when her mother chewed and slurping loudly. Roommates and friends produced less irritating triggers than family members and boyfriends. Relationships were broken on the initiative of patient or her boyfriends, mostly because of her claims about their eating behaviour.

When we have asked: "Would the relationship with each abandoned partner last longer if he did not produce trigger sounds?" the patient answered "Most likely SO". The question: "Would you so often terminate the relationships if you did not have the misophonia? " she answered – "It seems to me that NO".

She had a pharmacotherapy combined with course of CBT.

During follow-up, the patient demonstrated absolute relief of urinary symptoms. PCR, urinalysis and microbiological cultures taken at the endpoint were normal. The A-MISO-S score at the end of CBT was 10 points, with reduction of 44.4%. However, eight months after completed treatment she was diagnosed with ureaplasmosis. She did not find a constant sexual partner and continued the practice of casual relationships.

Discussion

Presented case reports are describing five young urological patients of both sexes, with a similar urological problem – chronic inflammatory pathology. They all have in common irregular sexual life with different partners and a psychological condition of unknown aetiology, called "misophonia", an under-recognized condition of psychiatric relevance [18].

Individuals with misophonic experiences have intense negative feelings (anger, disgust, hatred) when they hear specific trigger sounds made by other people, roommates, spouses or family members. The trigger sounds like chewing, lip-smacking, breathing, whispering, throat clearing sounds, repetitive tipping and many others may cause intense anger, aggression, physical arousal or even "fight-or-fly" response [5,13]. Consequently, sufferers predominantly try to avoid hurting situations or accept them with several discomfort, which leads to deep functional impairment and social isolation. Occasionally, individuals with extreme form of misophonia even may have the potential to end their lives [19].

Mechanisms of misophonia development are unclear and under intensive investigation now. Recent studies show that misophonia could be associated with altered brain activity in the anterior insular cortex, a principal part of "salience network" or even caused by abnormal inner brain structure that was confirmed by magnetic resonance imaging [20-22]. There is limited evidence for autosomal dominant inheritance in misophonia sufferers [23]. Interestingly, that exposure of individuals with misophonia under influence of triggering sounds is associated with their behavioral reactions and worsened cognitive control [24]. Neuroticism and complication with regulation of emotions might be considered the important risk factors and became the treatment targets for misophonics in the future. During distress sufferers experience troubles in control of their impulsive behaviour that may indicate the relationship between neuroticism and misophonia [25].

Researchers are reporting that commonly the onset of misophonia occurs just before or in early adolescence before puberty [13,26]. Our patients experienced their first misophonic issue at the mean age 12.4 ± 1.6. We cannot provide an explanation of that fact at this point. The only logical assumption may be the relationship between the appearance of misophonia and hormonal adjustment of the body in adolescence. Further research on this issue is clearly needed. All of our patients reported that first misophonic issue they have felt during a feast with close family members when one of them produced annoying sound. It looks that the essence of such phenomenon and role of first triggering persons in misophonia appearance and development should be clarified in future. Interesting feature of presented patients one and two is their reduced irritability to the triggers during "honeymoon period", which also may have hormonal background alone or combined with euphoria and intensive positive emotional stress during a new acquaintance. Incomprehensible is the feature that people who have closer communication (family members and sexual partners especially) caused more intensive sound triggers and negative emotions in our patients, while the same sounds from strangers or coworkers were usually less harmful.

At the present time, there is a growing interest and discussion about whether adverse sound sensitivity is a distinct psychiatric disorder. According to authorities in this field misophonia has signs and could be considered as a new mental disorder [13,27]. Oppo-

site them, Brout and associates in 2018 argued against assigning misophonia that status [6]. Hence, based on the literature it is not clear now whether misophonia is either as part of a neuropsychiatric disorder or as a yet to be understood condition [28].

Three of our presented patients have registered concomitant mental illnesses, while another two were without their signs except misophonic symptoms. Based on our small sample we can no draw any conclusions in this regard, however, the fact that there are two patients with confirmed misophonia without any other neuropsychiatric diseases we recorded. That indicate the presence of patients with misophonia only, not having others mental pathology. Simultaneously, Cassiello-Robbins and associates in 2021 concluded that misophonia itself just may be linked with some psychiatric symptoms and even highlight the role of anxiety in sufferers [29].

In the meantime, as presented in the current study, this specified pathology substantially affects interpersonal functioning and patient's mood. The behaviours of patients in the case study demonstrated dysfunctional ways of coping with misophonic symptoms that could impact urological status and potentially have a negative influence on their health. As described, behavioral difficulties of misophonia sufferers did not allow them to maintain stable and long-term relationships. The coping mechanisms of presented persons with misophonia were dictated them of frequent relationship change or total avoidance of sexual partners.

Obviously, that lack of ability to create long-lasting relationships has a negative impact on emotional and physiological wellbeing and components of sexual life. Patients one, two, four and five informed our doctors about numerous casual sexual contacts that were conditioned not by a desire of new sexual experience, but by consequences of misophonia and induced "fight-or-fly" response, "inability to stay in constant stress by waiting for trigger sounds from their partners or hearing them" during everyday life or sexual intercourses. The same reasons had led to abstinence in patient three.

At present time, the correct management of misophonia might be considered enigmatic. Interventions for patients mostly incorporate concept of CBT [30]. Recent paper by Altýnöz and associates, describing step-by-step CBT sessions and confirms efficacy of CBT in a 18 year old female patient [31]. Roushani and associates in 2021 presented their experience of helpful CBT for correction of anger in three young females with misophonia, with recovery percentages of 43.83%, 42.28%, and 9.09% (i.e., therapeutic and recovery effects) of the first, second, and third participants respectively with overall recovery rate of 31.73% [32]. Unfortunately, even after CBT treatments symptoms of misophonia in our patients have not completely ceased. According to the A-MISO-S score, the reduction of symptoms was 38.5% for patient one, 31.2% for patient two, 38.9% for patient three, 35.3% for patient four and 44.4% for patient five, with overall recovery rate of 37.7%. That is why all the patients continued to struggle from disturbing negative emotions, thereby prolong their avoiding practices with frequent changing of sexual partners or vice versa long-term abstinence.

It is still unclear whether misophonia is an independent mental disorder or a part of other mental or neurological diseases, but presented cases demonstrated how this condition most likely influences urological status of our patients. Previously it has been shown that different psychopathology was uniquely related to increase of acquired STDs. Urological patients with chronic prostatitis have a high prevalence of concomitant mental disorders. For example, Lee SC and associates in 2018 concluded that patients with bipolar disorder, especially those with a history of high-risk sexual behaviours, should be routinely screened for STDs because of their mental illness might increase the risk of subsequent newly diagnosed STDs, including syphilis, genital warts, and trichomoniasis [33-36]. Very similar increased correlation of STDs we can find in patients with

Attention Deficit-Hyperactivity Disorders, Conduct Disorder, Schizophrenia, Substance-Related and Addictive disorders, depressive disorder [37-41].

Long lasting abstinence that practiced by Patient three might also lead to nonbacterial prostatitis development. Yavaşçaoğlu and associates in 1999 claimed that abstinence influences the development of chronic nonbacterial prostatitis and recommended regular sexual life for relief of symptoms [42]. Gallo in 2014 identified sexual abstinence as one of the main risk factors for prostatitis [43]. Early detection of above-mentioned interconnections between behavioral (including misophonic) features and urological pathology with their correct management could improve health, quality of sexual life and prognosis in sufferers.

Misophonia is related to many aspects of functioning – hearing, emotions, physiology, and social activity [44]. Until now, analysis of sexual life in people with adverse sound sensitivity was not performed. We trie to present our own vision of that problem and to open the discussion on the subject. This sensitive research area will be considered promising by taking into account the prevalence of misophonia in the population [28,45]. Often individuals with misophonia will self-diagnose and seek help in psychiatric outpatient clinics only when symptoms are already unbearable or comorbid with other psychiatric conditions such as anxiety, OCD, intermitted explosive disorders etc.

As described in presented patients, there is a conflict between a young person's natural desire to have a full and stabile sexual life and rising limitations due to misophonia's pathology: negative emotions towards the sexual partner who produce the triggering sounds.

One of the investigated subjects with misophonia has chosen avoidance and abstinence (patient three), while the others, guided by their instinct, searched for their pair. However, after falling into the despair of negative emotions and broken relationships they were still looking for a new partner. Other four particular cases attempted to cope with their symptoms of misophonia by frequently changing sexual partners, instinctively searching for an ideal partner who will not produce the annoying sounds, which led them to an increased risk and occurrence of STDs. Perhaps such behaviour was mediated by some other psychological trait, such as impulsivity, poor frustration tolerance and immature defence system. Obviously, not every person suffering from misophonia will react in this way to difficulties in interpersonal relationships. The patients who are at risk of contracting STDs fall into the field of urology, while the sexual life of persons practicing abstinence, like patient three, is out of sight as an underwater part of iceberg.

According to other above-mentioned authors, their reports and our observations, regular sex with a healthy partner is a prerequisite for urological and mental health. Actually, frequent change of sexual partners with irregular use of barrier contraceptives increases the risk of STDs. It is known that prolonged abstinence can also be the cause of urological pathology in men [33-36,38,42,43]. One of the main recommendations we give our patients in order to prevent the recurrence of urological inflammatory pathology and STDs is a stable sexual life with a healthy permanent partner. However, our patients could not follow our advices and stabilize their sexual lives. The main result of our survey shows that misophonia is the cause that prevents patients from maintaining long-term and stable intimate relationships. Therefore, it might be considered as a main cause of inadequate intimacy with an indirect effect on the urological status. Miisophonics are not the only initiators of the relationship breakup. As case reports four and five reveal, some partners of misophonic women left them because boyfriends were annoyed by the need to limit their behaviour and restrain natural physiological sounds during communication, meals and sex. They "patient's claims about their eating behaviour did not suit them" and therefore were the first to take a step towards ending the relationship.

Further studies on the sexual behaviour of persons with misophonia are necessary, in the spectrum between abstinence on the one hand

and numerous sexual relations on the other. The presented cases do not mean that all individuals with that condition must have urological pathology, but certain relationships might occur.

Finally, it looks as misophonia negatively influences patient's ability to achieve permanent intimacy, as well as negatively affects the quality of interpersonal close communication and results in a significant decrease of the ability to maintain long-term relationships.

On one side the condition might lead to occasional sexual contacts with different partners that may cause dissemination of STDs and chronic urologic pathology in presence of risky sexual behaviour. On another side, long-term abstinence induced by misophonic avoidance also can cause inflammatory (non-infectious, congestive) urological problems in man (patient three).

The essence of described adverse sound sensitivity is still unclear [46]. The fact that misophonics would find human eating sounds as most aversive when compared with animal eating and non-eating sounds remains unexplained [47]. Latest large sample study performed by Jager and associates in 2020 demonstrates that misophonia could be considered as a distinct psychiatric disorder that supports Schröder's and Taylor's viewpoint [13,27,48]. We have to emphasize that questionnaires used to address misophonia need verification and that their versions changed substantially over time. In our opinion, it may be worth adding specific questions that reflect the quality of sexual life.

The main and clear limitation of our study is the small number of enrolled patients. In light of that fact, we were not able to establish a correlation between investigated parameters and make fundamental conclusions. Authorities in the new field of misophonia had reported about their experience on significant samples with sound issues in their databases [11,12,45,46,48,49]. In this regard, it would be interesting to know about the quality of sexual life and duration of permanent close relationships, as well as their specific urological/gynaecological history. The second limitation of our investigation is the fact that we collected such a small sample due to the selection criteria and only among urological/gynaecological patients. This is just our assumption, but if psychotherapists' obtained full history of urological/gynaecological health and sexual behaviour in misophonics, they might find many special traits and observations. Proposed professional questions that we have asked our participants could be very helpful screening tools for researchers and can improve newly developed questionnaires as well.

To our knowledge, this is the first manuscript describing experience of management of urologic patients with misophonia. Despite of CBT, misophonic symptoms have not ceased completely and presented patients continued the former practice of sexual partner's withdrawal or avoidance. We have gathered better understanding of misophonia and its likely connection to broken relationships and urological status via different coping mechanisms. Analysing the process of avoidance and careful examination of sexual functioning in individuals with adverse sound sensitivity could be helpful for the efforts of modifying treatment strategies. There is a great possibility that only after numerous multidisciplinary investigations we can achieve a statistically significant sample of patients with misophonia. Taking into account the probable influence of misophonia on sexual life in males and females, urologists and gynaecologists can join the future studies together with specialists in the fields of psychiatry, psychotherapy, psychology, neurology and audiology.

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Mizofonija u uroloških bolesnika: naše iskustvo u liječenju

Sažetak - Ovaj prikaz slučaja istražuje uzorak od pet bolesnika s ponavljajućim kroničnim urološkim upalnim bolestima i preosjetljivošću na zvuk. Zajednička psihološka osobitost pacijenata je ta da ne podnose uobičajene tjelesne zvukove koje proizvode njihovi supružnici i okolina, što onemogućuje dugotrajnije emotivne veze, a naziva se "mizofonija". Unatoč psihijatrijskom liječenju, simptomi mizofonije nisu izblijedili u potpunosti. Pacijenti su nastavili izbjegavati partnera, uz učestalu promjenu spolnih partnera ili dugotrajnu apstinenciju. Slijedom toga, povremeni, često nezaštićeni, seksualni odnosi uzrokovali su nove spolno prenosive bolesti u kombinaciji s egzacerbacijom kroničnog prostatitisa / cistitisa, dok je apstinencija dovela do kroničnog ne-bakterijskog (kongestivnog) prostatitisa. Pretpostavka je kako mizofonija otežava održavanje dugoročnih emotivnih odnosa, te na taj način utječe na urološki status oboljelih. Bolje razumijevanje prirode mizofonije, njezinih mehanizama suočavanja i njezin hipotetski neizravni doprinos urološkoj patologiji, moguć je tek nakon budućih multidisciplinarnih istraživanja na većim i statistički značajnim uzorcima.

Ključne riječi: mizofonija; kognitivna bihevioralna terapija; emotivne veze; cistitis; prostatitis; spolno prenosive bolesti