Lower Urinary Tract Symptoms Decrease Health Related Quality of Life More than Other Most Frequent Morbidities

Ana Lesac Brizic*and Vladimir Mozetic

Department of Medicine, University of Rijeka, Rijeka, Croatia

*Corresponding Author**

Ana Lesac Brizic
Department of Medicine,
University of Rijeka,
Rijeka, Croatia,
E-mail: ana.lesac.brizic@domzdravlja-pgz.hr

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Abstract

Background: Lower Urinary Tract Symptoms (LUTS) are a public health problem. They can be very bothersome and worsen over time and may indicate numerous non-urological pathological conditions, as well as cause them. Large number of people is not aware of their LUTS. Therefore, the aim of this study was to investigate how LUTS affects the health related Quality of Life (hrQoL) in comparison to other morbidities.

Methods: This multimethodology study was conducted in Croatia by interviewing 444 subjects who reported to their GP and reviewing their medical records. We determined the presence of LUTS and whether the respondents were aware of it. HrQoL was assessed using SF12v2 questionnaire.

Results: HrQoL was lower in subjects with LUTS than in subject with impaired health due to other morbidities (p<0.0001). Among LUTS affected subjects, the ones who recognized their condition before an education about the clinical manifestations of LUTS had even lower hrQoL (p<0.0001). Subjects with LUTS had more comorbidities (p<0.0001).

Conclusions: LUTS strongly decreases hrQoL. The observed impairment of hrQoL could be prevented by educating primary health care patients to recognize LUTS early.

Keywords: Health promotion • Lower urinary tract symptoms • Quality of life • Transmural inflammation • Rigors

Introduction

Lower Urinary Tract Symptoms (LUTS) is a term that describes a broad range of micturition symptoms: Voiding symptoms (weak or slow stream, splitting or spraying of the stream, intermittency, hesitancy, straining, terminal dribble), storage symptoms (frequency, nocturia, urgency, incontinence, nocturnal enuresis, altered bladder sensation), and post micturition symptoms (feeling of incomplete emptying, post micturition dribble) [1]. They should be recognized as a public health concern because they affect a significant portion of population, and are an expensive health condition with high monetary and non-monetary costs to the healthcare system and the patients [2-8].

Efforts should be made to prevent, detect, and diagnose LUTS as soon as possible because LUTS is not only a sign of Lower Urinary Tract (LUT) disfunction, but can also be a sign of dysfunction of any other organic system [9-16]. It can also be the cause of other diseases [17-20]. However, LUTS is not adequately recognized and treated in primary health care, mainly because patients are unaware of their LUTS. Generally, a person that recognizes LUTS already has at least 4 LUT symptoms and bothersome level 8 (on scale 0-10).

Even though it has been shown that LUTS decreases health related Quality of Life (hrQoL), published studies mainly compared hrQoL between people with LUTS and general/healthy population. To our knowledge, this is the first study that compared hrQoL between people with LUTS and people who do not have LUTS but do have impaired health by some other medical condition.

We hypothesized that LUTS does not impair hrQoL as strongly as other morbidities, which could explain why the patients are not aware of their LUTS until their condition becomes severe.

Materials and Methods

Participants and research setup

This mixed method study was conducted among voluntary adults who sought help from GP, regardless of the reason. The sample size determined by the Altman monogram (test power 0.8) was 384 subjects. Taking into account that non-parametric tests had to be used in the study, an additional 15% of the original sample size (58 subjects) was added to this sample size resulting in minimum of 442 respondents. Randomization of the sample was ensured in a way that no more than first 5 subjects visiting GP were interviewed in each GP's office.

The presence of LUTS was determined in a way that subjects first self-reported if they had problems with urination. Then, they were educated about the clinical manifestations of LUTS (Educational Interview, EI). Following EI, subjects had the opportunity to report if they recognized any additional LUT symptom. HrQoL was assessed using the SF-12 Health Survey version 2 (SF-12v2) (Quality Metric Incorporated, Johnstone, Rhode Island USA). Comorbidities were identified by reviewing medical records.

Statistics: The SF-12v2 scores were calculated using a computer program PRO CoRE 1.4 smart measurement system (Optum, Eden Prairie, Minnesota USA). The data were statistically processed and graphically displayed using a computer program GraphPad Prism 8.0.0 for Windows (GraphPad Software, San Diego, California USA). The normality of the data distribution was tested by the Kolmogorov-Smirnov test, and the results were obtained using Mann-Whitney test. Statistically significant was p<0.05.

Results

Participants and LUTS awareness: There were 444 participants, out of whom 313 (70%) had LUTS. Out of 313 participants that had LUTS, only 40% (N1=128) were aware of it, while the rest 60% (N_2=185) recognized LUTS only after the EI.

HrQoL in LUTS and non-LUTS patients: Subjects with LUTS had lower hrQoL than subject without LUTS but with impaired health due to other medical problems (General Health (GH), p<0.0001). Both physical and mental component score (PCS and MCS, respectively) were decreased, as well as all their domains, except pain. Results are shown in Figure 1.

HrQoL and patients awareness of LUTS: Next, we compared the hrQoL between LUTS affected subjects who were aware of their LUTS and those who recognized LUTS only after the EI. As shown in Figure 1, subjects who recognized LUTS before the EI had even lower hrQoL (GH, $p<0.0001$) than those who also had LUTS but recognized it only after the EI. Difference is seen in PCS and all its domains. MCS was affected in domain of Social Functioning (SF).

Comorbidities in LUTS and non-LUTS patients: Since LUTS can have an etiological cause outside the urological system, as well as it can be the cause of other medical conditions, we compared the number of comorbidities between subjects with and without LUTS. Subjects with LUTS have more comorbidities than subjects without LUTS ($p<0.0001$).

Discussion

Since high frequency of primary health care patients is unaware of their LUTS, we hypothesized that LUTS decreases hrQoL to a lesser degree than other morbidities. The results disproved this hypothesis. People with LUTS have more greatly impaired hrQoL compared to people with other medical conditions. LUTS decreases all health components and their domains, except pain. The reason for this is probably the fact that the vast majority of LUT symptoms are not painful.

Subjects who recognized LUTS before the EI had even worse hrQoL than the subjects who also had LUTS and lower hrQoL scores but recognized LUTS only after the EI. The difference is seen in PCS and all its domains, as well as in the SF domain of the MCS. MCS is affected later than PCS, probably because patients learn to cope with physical manifestations of LUTS until the symptoms and coping strategies become too bothersome and/or tiresome. Also, elderly patients tend to believe that certain symptoms are normal for their age and therefore pay little to no attention to them when they initially occur. However, SF domain of the MCS is affected early, and this is mainly connected to the storage symptoms (data not shown) and feeling embarrassed due to incontinent episodes.

LUTS can be a sign and a cause of numerous other pathological conditions. Indeed, our results showed that the subjects with LUTS had more comorbidity (Figure 1).

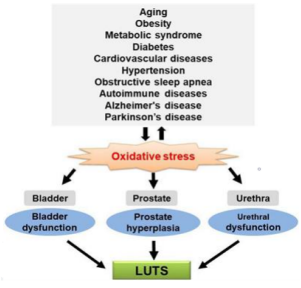

Figure 1. A putative link between lower urinary tract symptoms and aging and major chronic diseases.

The main limitation of this study is the sample size. It was statistically determined so that the number of subjects was sufficient and representative; however, a larger sample would more closely approximate the population.

Conclusion

The results suggest that early recognition and management of LUTS could slow down or even prevent the observed impairment of hrQoL. One of the main roles in the early recognition of LUTS is to make patients aware of its existence through education.

Ethical Aspects

All respondents read informed consent and signed consent to participate in the research. All research was conducted with the written consent of GPs to whose clinical practices the subjects belong, and with the approval of ethics committee of community health center of primorje gorski kotar county (Croatia) and medical faculty of university of rijeka (Croatia). The research has ensured compliance with bioethical standards, basic bioethical principles, as well as those derived from them, in accordance with the Nuremberg Code, the latest revision of Helsinki declarations, and other relevant documents.

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Conflict of Interest

None to report.

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