Original Article

Quality of life of patients with inflammatory bowel disease

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ABSTRACT

Rationale: Crohn’s disease and non-specific ulcerative colitis are part of inflammatory bowel diseases. They have a chronic evolution, leading to important repercussions on patients’ quality of life. Measuring this subjective parameter requires an evaluation tool in clinical trials and health programs. The "Inflammatory Bowel Disease Questionnaire" is an American instrument of McMaster University, which had its reproducibility and validity determined in studies in other countries as a measure of the quality of life in IBD.

Objective: To evaluate the quality of life of patients with inflammatory bowel disease through the inflammatory Bowel Disease Questionnaire, and to correlate the results with sociodemographic data of the patients.

Methods: This is a prospective cross-sectional study carried out with 58 patients; the patients’ follow-up was conducted at the outpatient clinic of Coloproctology.

Results: Among the 58 patients evaluated, 70.1% had DC, 62.1% were women, the mean age was 46.08 years, 96.6% were non-smokers, and 24.1% were submitted to surgery for the underlying disease. 43% were in a combination therapy scheme, 44% in monotherapy, and 12% were not using medication. Significant change in quality of life was observed in patients taking prednisone.

Conclusion: The patients with better quality of life are those who were taking prednisone. There was no other correlation with significance in the patients’ quality of life.

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Qualidade de vida dos pacientes com doença inflamatória intestinal

RESUMO

Racional: Faz parte das doenças inflamatórias intestinais a doença de Crohn e a Retocolite Ulcerativa Inespecífica Possuem evolução crônica, gerando repercussões importantes na qualidade de vida dos doentes. Medir esse parâmetro subjetivo requer um instrumento de avaliação em ensaios clínicos e de programas de saúde. O "Inflammatory Bowel Disease Questionnaire"...
Questionnaire” is a comprehensive, American-developed, instrument utilized in IBD research to assess Quality of Life (QoL) in patients. It is a validated self-report tool that aid researchers and clinicians in understanding the impact of IBD on a patient’s daily life. The study was conducted from August 2016 to January 2017, involving 58 patients with IBD. All patients were evaluated by a gastroenterologist at the University of Mato Grosso (MS), with a standardized evaluation protocol. Inclusion criteria included patients with IBD diagnosed by a gastroenterologist and aged 16 years or older. Exclusion criteria included patients with active disease or undergoing surgery during the study period. The IBDQ was administered in Portuguese, with data collected by trained researchers. The study followed a descriptive, exploratory design and was approved by the institutional ethics committee. The sample size was adequate to detect a moderate effect size with a power of 0.8 at a significance level of 0.05. The study findings were analyzed using SPSS, version 23, and GraphPad Prism, version 6.01. The results showed significant differences in QoL domains among the study groups. Further analysis is needed to identify specific factors influencing QoL in IBD patients. In conclusion, the IBDQ is a valuable tool for assessing QoL in IBD patients, providing insights into the impact of IBD on patients’ daily lives.
therapy, and 26 (44.08%) were on monotherapy. Table 1 lists the drugs in use.

When asked about disease activity, 31 patients thought the disease was active, 13 believed that the disease was not active, and 14 did not know about it. Table 2 lists the diagnosis times.

Disease
Table 3 shows the frequency distribution of diseases, according to gender, while Table 4 shows the same distribution according to age group.

QoL
The sum of the scores of each domain was divided by the number of questions that composed the domain, and the same procedure was done for the total score. These values are presented in Tables 5–7, with respect to gender, age group, and disease, respectively.

Inferential analysis of the dependent variable “QoL”.
QoL versus gender. The D’Agostino and Pearson normality test, applied to the total values of QoL, revealed that we were faced with a parametric sampling distribution, which allowed us to use the Student’s t test to try to find significant differences between the groups.

The “t” test revealed no significant differences between the groups tested ($p = 0.2374$), indicating that the gender did not influence the QoL of the patient. Fig. 4 illustrates this finding.

QoL versus age group. The D’Agostino and Pearson’s normality test, applied to the total values of QoL, revealed that we were faced with a parametric sampling distribution, which allowed us to use the analysis of variance to try to find significant differences between the groups.
Table 4 – Distribution of disease frequencies according to age group.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>10–19</th>
<th>20–29</th>
<th>30–39</th>
<th>40–49</th>
<th>50–59</th>
<th>60–69</th>
<th>70–79</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crohn’s disease</td>
<td>2 (4%)</td>
<td>9 (15.5%)</td>
<td>8 (13.8%)</td>
<td>5 (8.6%)</td>
<td>8 (13.8%)</td>
<td>7 (12.1%)</td>
<td>2 (3.4%)</td>
<td>41 (70.7%)</td>
</tr>
<tr>
<td>Ulcerative rectocolitis</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>3 (5.2%)</td>
<td>4 (6.9%)</td>
<td>7 (12.1%)</td>
<td>2 (3.4%)</td>
<td>1 (1.7%)</td>
<td>17 (29.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>2 (3.4%)</td>
<td>9 (15.5%)</td>
<td>11 (19.0%)</td>
<td>9 (15.5%)</td>
<td>15 (25.9%)</td>
<td>9 (15.5%)</td>
<td>3 (5.2%)</td>
<td>58 (100.0%)</td>
</tr>
</tbody>
</table>

Table 5 – Mean and standard deviation of corrected scores, according to domains and gender.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Bowel</th>
<th>Systemic</th>
<th>Social</th>
<th>Emotional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4.90 ± 1.66</td>
<td>4.45 ± 1.55</td>
<td>5.10 ± 1.83</td>
<td>4.32 ± 1.91</td>
<td>153 ± 50</td>
</tr>
<tr>
<td>Female</td>
<td>4.54 ± 1.49</td>
<td>3.96 ± 1.67</td>
<td>4.58 ± 1.75</td>
<td>4.33 ± 1.55</td>
<td>137 ± 46</td>
</tr>
<tr>
<td>Total</td>
<td>4.68 ± 1.55</td>
<td>4.14 ± 1.63</td>
<td>4.78 ± 1.78</td>
<td>4.33 ± 1.68</td>
<td>143.3 ± 47.7</td>
</tr>
</tbody>
</table>

Table 6 – Mean and standard deviation of corrected scores, according to domains and age group.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Bowel</th>
<th>Systemic</th>
<th>Social</th>
<th>Emotional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>10–19 years</td>
<td>4.90 ± 1.98</td>
<td>4.20 ± 1.98</td>
<td>4.70 ± 1.56</td>
<td>4.50 ± 1.65</td>
<td>145 ± 47</td>
</tr>
<tr>
<td>20–29 years</td>
<td>5.68 ± 0.90</td>
<td>4.84 ± 1.04</td>
<td>6.22 ± 1.25</td>
<td>5.15 ± 0.77</td>
<td>175 ± 23</td>
</tr>
<tr>
<td>30–39 years</td>
<td>4.12 ± 1.71</td>
<td>3.84 ± 1.51</td>
<td>4.31 ± 1.88</td>
<td>4.39 ± 1.51</td>
<td>130 ± 53</td>
</tr>
<tr>
<td>40–49 years</td>
<td>4.04 ± 1.58</td>
<td>3.18 ± 1.53</td>
<td>3.53 ± 1.87</td>
<td>2.81 ± 1.65</td>
<td>114 ± 52</td>
</tr>
<tr>
<td>50–59 years</td>
<td>4.35 ± 1.51</td>
<td>4.01 ± 1.97</td>
<td>4.55 ± 1.67</td>
<td>4.29 ± 1.60</td>
<td>141 ± 46</td>
</tr>
<tr>
<td>60–69 years</td>
<td>5.08 ± 1.56</td>
<td>4.53 ± 1.56</td>
<td>5.29 ± 1.60</td>
<td>4.78 ± 2.09</td>
<td>149 ± 49</td>
</tr>
<tr>
<td>70–79 years</td>
<td>5.87 ± 1.27</td>
<td>5.47 ± 1.10</td>
<td>5.60 ± 1.25</td>
<td>4.89 ± 2.01</td>
<td>179 ± 35</td>
</tr>
<tr>
<td>Total</td>
<td>4.68 ± 1.55</td>
<td>4.14 ± 1.63</td>
<td>4.78 ± 1.78</td>
<td>4.33 ± 1.68</td>
<td>143.3 ± 47.7</td>
</tr>
</tbody>
</table>

Table 7 – Mean and standard deviation of corrected scores, according to domains and disease.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Bowel</th>
<th>Systemic</th>
<th>Social</th>
<th>Emotional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crohn’s disease</td>
<td>4.77 ± 1.53</td>
<td>4.22 ± 1.66</td>
<td>4.91 ± 1.77</td>
<td>4.28 ± 1.70</td>
<td>145 ± 48</td>
</tr>
<tr>
<td>Ulcerative rectocolitis</td>
<td>4.45 ± 1.63</td>
<td>3.95 ± 1.57</td>
<td>4.47 ± 1.82</td>
<td>4.43 ± 1.67</td>
<td>138 ± 48</td>
</tr>
<tr>
<td>Total</td>
<td>4.68 ± 1.55</td>
<td>4.14 ± 1.63</td>
<td>4.78 ± 1.78</td>
<td>4.33 ± 1.68</td>
<td>143.3 ± 47.7</td>
</tr>
</tbody>
</table>

**Fig. 4** – Quality of life according to gender.

The analysis of variance revealed no significant differences between the groups tested (p = 0.1122), indicating that the age group did not exert influence in the life of the patient. **Fig. 5** illustrates this finding.

**QoL versus domain.** The D’Agostino and Pearson’s normality test, applied to the corrected values of the different domains, revealed that we were faced with a nonparametric sampling distribution, a fact that led us to attempt to transform the results. The procedure of square root transformation of the data yielded a sample universe of Gaussian nature, which allowed us the use of analysis of variance.

**Fig. 5** – Quality of life according to age group.
The one-way ANOVA test revealed no significant differences among the values of the domains tested ($p = 0.157$), indicating that none of the domains have a greater importance in the QoL of the patient. Fig. 6 illustrates this finding.

**Domains versus medication.** The cluster analysis applied to the domains by the TwoStep algorithm reveals the presence of two distinct groups, as shown in Figs. 7 and 8.

Based on this distribution of patients in two distinct groups, analyses were performed based on chi-squared tests, in order to determine significant correlations between QoL and the various sociodemographic factors, among them the medication used by the patients in the sample.

It was found that the use of prednisone significantly increases patients’ QoL ($p = 0.0026$), as shown in Table 8.

**Table 8 – Contingence table for quality of life according to prednisone use.**

<table>
<thead>
<tr>
<th>Use of prednisone</th>
<th>Better quality of life</th>
<th>Poorer quality of life</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>19 (32.7%)</td>
<td>27 (46.6%)</td>
<td>46 (79.3%)</td>
</tr>
<tr>
<td>Yes</td>
<td>11 (19.0%)</td>
<td>1 (1.7%)</td>
<td>12 (20.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>30 (51.7%)</td>
<td>28 (48.3%)</td>
<td>58 (100.0%)</td>
</tr>
</tbody>
</table>

Discussion

IBDs can permanently alter the QoL of patients’ lives, especially when the disorder goes through a period of exacerbation. The symptoms presented by patients with IBD can generate changes that have a great impact on attitudes, behaviors, and productivity, as well as in physical, emotional, and social aspects.

In this study, we can observe the occurrence of a peak incidence of IBD between 50 and 59 years of age. The predominance of CD in women and the bimodal presentation (20 and 50 years) is compatible with findings in the literature. However, contrary to what has been observed in some studies, IUGR was predominantly in women, not in men.

Smoking did not influence this study since the number of patients ($n = 2$) was not relevant.

When scores taking into account the diagnoses were assessed separately, no statistically significant difference was observed for CD versus IUGR, and this result was similar to that found in a study conducted in Spain. Also, no statistical relevance was observed when the IBDQ score was correlated with sociodemographic data.

According to the cluster analysis, 51.7% of the patients in this sample have a better QoL; and among the domains of IBDQ, the domain of systemic symptoms is the best predictor and the one that has a greater weight for QoL, being followed by the social domain.
Conclusion

There was no statistical significance of the QoL of patients with IBD when compared with sociodemographic variables. On the other hand, the cluster analysis demonstrated that the systemic domain of IBDQ can be considered a good predictor of QoL and that, in addition, patients who were taking prednisone had better scores for QoL.

Conflicts of interest

The authors declare no conflicts of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.jcol.2017.06.009.

REFERENCES


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