ASSESSMENT OF HEALTH-RELATED QUALITY OF LIFE AND RISK FACTORS ASSOCIATED WITH PANCREATITIS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: The objective of the study was to measure the health-related quality of life (HRQoL) in pancreatitis and to appraise the risk factors associated with the pancreatitis.

Methods: A prospective observational study was performed with admitted cases of pancreatitis over 6 month's period. A total of 150 patients were selected for the study. All data concerning risk factors were recorded and Short-Form-36 (SF-36) questionnaire was applied and quality of life (QOL) was analyzed in all patients with in study group.

Results: All domains of (HRQoL) were assessed; it shows highest effect on role limitations due to physical health (36%), role limitations due to emotional problems (29%), role limitations due to physical health, and role limitations due to emotional problems (10%). Finally, our study revealed that there is a profound deterioration in physical components of QOL. The risk factors that majorly influence the QOL in association with disease were found to be alcohol consumption and smoking (70%).

Conclusion: Pancreatitis remarkably diminishes the patient's HRQoL which predominantly shows negative impact on physical health.

Keywords: Quality of life, Health-related quality of life, Pancreatitis, SF-36 questionnaire.

INTRODUCTION

Health is fundamental to human life [1]. Quality of life (QOL) is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs, and their relationship to salient features of their environment [2,3]. The narrower focus on the QOL due to state of health is called "health-related quality of life (HRQoL)" [3]. HRQoL is multi-dimensional (contains multiple items and domains) including physical, psychological, functional, and social domains related to a person's perception of QOL affected by health status [4]. On the individual level, HRQoL includes physical and mental health perceptions (e.g., energy level and mood) and their correlates – including health risks and conditions, functional status, social support, and socioeconomic status [5]. Reasons behind measuring HRQoL are it is related to both self-reported chronic diseases (diabetes, breast cancer, arthritis, and hypertension) and their risk factors (body mass index, physical inactivity, and smoking status), helps in determining the burden of preventable disease, injuries, and disabilities, and can provide valuable new insights into the relationships between HRQoL and risk factors, additionally assist the monitor progress in achieving the nation's health objectives [6]. HRQoL is usually measured with "instruments," which refers to patient questionnaires. HRQoL is frequently measured with "tools" in the form of questionnaires, for instance the 36 Item Short-Form (SF-36) Surveys or the EuroQoL 5 Domain tool. These tools are used extensively in the realm of economic evaluation and health technology assessment since their results can be converted to numerical values [1,7,8].

India has unique challenges in delivering healthcare due to its huge population size and growing number of elderly populations. India with its vast population and increasing healthcare challenges in its delivery as should aim at creating infrastructure for carrying out HRQOL studies in making health policy decisions. During the past decades, there was an increasing predominance of chronic disorders, therefore, an increasing number of people live with chronic diseases that can adversely affect their HRQoL. In general, chronic diseases are slow in progression, long in duration, and they require medical treatment. The majority of chronic diseases hold the potential to worsen the overall health of patients by limiting their capacity to live well, limit the functional status, productivity, and HRQoL and are a major contributor to health care costs. Among these diseases are cancer, heart diseases, stroke, diabetes, HIV, bowel diseases, renal disease, and diseases of central nervous system [3]. Conclusively, as the number of people with chronic diseases is increasing, it is necessary for them to gain an optimal HRQoL. To achieve this, a study of HRQoL is used to evaluate the impact of a disease and the effects of medical interventions.

Pancreatitis is an illustration of corresponding disease. Pancreatic disease plays significant freight on health care systems throughout the world. Pancreatitis is one of the most common gastro intestinal causes of hospital admission [9]. It is a long-lasting condition shows impact on the physical health and well-being of people. The risk factors associated are gallstones, alcohol, trauma, infections, hypercalcemia, and hypertriglyceridemia [10-13].

It shows grievous manifestations such as pain (episodic), gastrointestinal symptoms, weight loss, and others such as muscle weakness and fatigue and also worsened. If this pancreatitis persists for longer period of time, it results in development of many other complications such as pseudo cyst and pancreatic abscess and even pancreatic cancer which directly exhibits physical, emotional, and economic burden because –
1. There is no proper identification of risk factor regarding disease affecting QOL
2. Lack of interest to be aware of risk factor
3. Lack of knowledge regarding QOL.

Accordingly, the interest was shifted to calculate the effect on QOL focusing on improving the QOL.

METHODS

This prospective observational study was conducted for a period of 6 months from June 2019 to November 2019 in the Department of General Medicine and General Surgery at Sri Venkateswara Ramnarain Ruia Government General Hospital (SVRRGGH), Tertiary Care Teaching Hospital, Tirupati. The study was conducted after approved by the Institutional Ethics Committee (Proposal No: SPSP/2019-2020/PDO2). A total of 150 pancreatitis patients were included in the study.

Study materials
- Patient data collection pro forma.
- Informed consent form.
- SF-36 questionnaire.
- Patient information leaflet on pancreatitis.

Study criteria
Inclusion criteria
- Patients of age >18 years in general medicine and general surgery in-patient ward with or without co-morbidities presenting with pancreatitis were included in the study.

Exclusion criteria
The following criteria were excluded from the study:
- Patients unwilling to participate in the study.
- Pregnant and lactating women.

Method of data collection
This prospective observational study was carried out after obtaining the permission of institutional review board, Sri Padmavathi School of Pharmacy, Tiruchanoor, Tirupati, Andhra Pradesh, India. All patients (>18 years) having pancreatitis admitted in the general medicine and general surgery in-patient ward of SVRRGGH are included in the study. First, the data are obtained through direct patient interview and case profile. During the patient interview data pertaining to demographic details, detailed symptoms, medical history, medication history, dietary habits, and previous and current alcohol consumption habits, smoking habits were collected. By viewing the case profile of the patient, the following data were collected and entered into pro forma: Laboratory findings, systemic examination, previous surgical history, and medication therapy. Based on this data, the major etiological factor responsible for the development of pancreatitis was identified. After the first session, the patients were interviewed by applied SF-36 questionnaire. QOL was assessed using 8 domains of 36 item SF Health Survey (SF-36) which is a SF measure of general health status in a population. During the interaction with the patients were asked the questions regarding SF 36 questionnaire

Score ranges from 0 to 100 with.
- Higher scores – better functioning and well-being.
- Moderate scores – poor QOL.
- Lower scores – abnormal functioning and worst QOL based on the obtained score the QOL is determined.

We provided counseling sessions based on the QOL. By using patient information leaflet and pointed out the individual risk factor to prevent further reduction of QOL.

Statistical analysis
After application of the SF-36 questionnaire, the scores obtained were entered into Microsoft excel 2013 and calculation was made according to the domains and results were obtained.

RESULTS

Among the patients studied most of them (61%) were in age group of 31–50 years followed by 21% were in age of 18–30 years, where males constitute 93% and females contribute about 7%. Most of the patients have been diagnosed with chronic pancreatitis (55%) and rest of them where diagnosed as acute pancreatitis (45%); moreover, the patients presenting complications are about (37%), which comprises of pseudocyst, abscess, diabetic mellitus, cholelithiasis, and pleural effusion. Furthermore, it was observed that 57% of the patients have a history of acute pancreatitis followed by 6% 0f chronic pancreatitis and 25% of patients do not have any medical history in the past. The most common presenting symptom was abdominal pain, where it is the only symptom (one) seen in 15% of patients, 39% of patients presenting both abdominal pain and vomiting's (two), additionally with weight loss (three) 12%, weight loss, and others gastrointestinal symptoms are observed. In the present study, we observed that among these 150 patients 40% have undergone surgery as treatment option sequentially, 60% of the patients were treated with conventional therapy which includes analgesic, antibiotic, and supportive therapy (Table 1).

In the present study, out of 150 patients who are diagnosed with pancreatitis, we observed alcohol was the profound risk factors that precipitate pancreatitis, indicating 35% of patients were alcoholic, 35% of patients were both alcoholics and smokers too, followed by patients with biliary infections, viral infections, undergone trauma, and dietary style (Fig. 1).

After the segregation of demographic details of pancreatic patients, we are presenting the results according to domain wise classification of SF-36 questionnaire.

In the present study, based on calculation of questionnaire, we noticed that the most influenced domain was physical role limitations where 59% of patients showing lowest score leading to abnormal functioning at physical role (worst QOL), succeeded by (Emotional role) role limitations due to emotional problems (32%) showing least scores suggesting abnormal functioning at emotional role.

Among the physical components, the pancreatitis presented its impact on physical role of patients, about 59% showing the least scores suggesting worst QOL. Furthermore, the bodily pain and general health presenting with 67% and 79% moderate scores, respectively, indicating poor QOL.

Similarly, among the mental components, the most impacted one was emotional role, about 32% of patients showing lowest scores leading to abnormal functioning of QOL. Besides that, the influence on social functioning, mental health, and vitality was modest presenting with 94%, 86%, and 85% of moderate scores, respectively, designating a poor QOL (Table 2).

Out of 150 patients, major impact was found within the physical component of HRQoL which is about 51%, followed by mental component of HRQoL 35% and both physical and mental component of HRQoL 14%, respectively (Fig. 2).

DISCUSSION

This study evaluates the risk factors and illustrates the impact on HRQoL in relation to various domains among pancreatitis patients. Moreover, we have gained further vision regarding the lifestyle that is responsible for worsening the HRQoL.

The framework of study incorporates a total of 150 patients suffering from pancreatitis. Among distinct age groups, the greatest proportion of patients hospitalized was under the age group of 20–50 years, followed by 51–60, more than 60 years the results found are supported by Jha *et al.* [10]

Regarding gender, males were found to be profoundly affected (93%) compared to females, similar findings were presented in the study by Pang *et al.* [13], Quero *et al.* [14], Broome *et al.* [15], and Lankisch *et al.* [16]. This may be due to life style of the males which differ from females.

The majority of patients were found to have an acute pancreatitis (57%) in the past. The presence of the history in the past leads to the development of chronic pancreatitis in the near future. Therefore, we observed a wide range of chronic pancreatitis (55%) compared to acute pancreatitis (45%). The obtained results were supported by Chatila *et al.* [9]

In our study, most of the patients are without complications (67%) and those who are found with complications (33%) are predominantly with pseudocyst (53%), followed by drainage of fluid. The results were supported by Gopal *et al.* [17], Lankisch *et al.* [16], and Shah *et al.* [18].

Our study revealed that alcohol (35%), alcohol with smoking (35%) induced pancreatitis were in greater proportion compare to gall stone induced pancreatitis which was supported by Garret *et al.* [19], Krishnan *et al.* [20], and Fitzsimmons *et al.* [21], this can be explained by increase in incidence rate of alcohol abuse in India. These results were opposed by Mole *et al.* [22] where gallstone-induced pancreatitis is majorly observed.

Abdominal pain (100%) was the most pronounced symptom along with all other symptoms such as vomiting, diarrhea, and weight loss which was observed in our study population. This was supported by Quero *et al.* [14], Sohn *et al.* [23], and Wehler *et al.* [24].

The treatment underwent was majorly with conservative therapy (60%), and surgery (40%). This was supported by Shah *et al.* [19].

We used the SF health survey 36 (SF36) questionnaires a generic instrument to evaluate the QOL. The questionnaire has psychometric reliability and content, convergent, and discriminant validity and internal consistency when used in patients with many different discords, including chronic pancreatitis. This study demonstrates about individual domain of HRQOL affected by disease status along with risk factors. The obtained results were supported by Hochman *et al.* [25], Pezzilli *et al.* [26], Soran *et al.* [27] Wehler *et al.* [24], Amann *et al.* [28], Sohn *et al.* [23] and Pinkowski *et al.* [29], Mokrowiecka *et al.* [30], and Beninca *et al.* [31].

In domain wise categorization, we found that effect on individual domain of QOL is as follows highest level limitations due to physical health were in 59%, 55% of patients were experiencing loss of energy with fatigue, highest limitation due emotional problems was found in
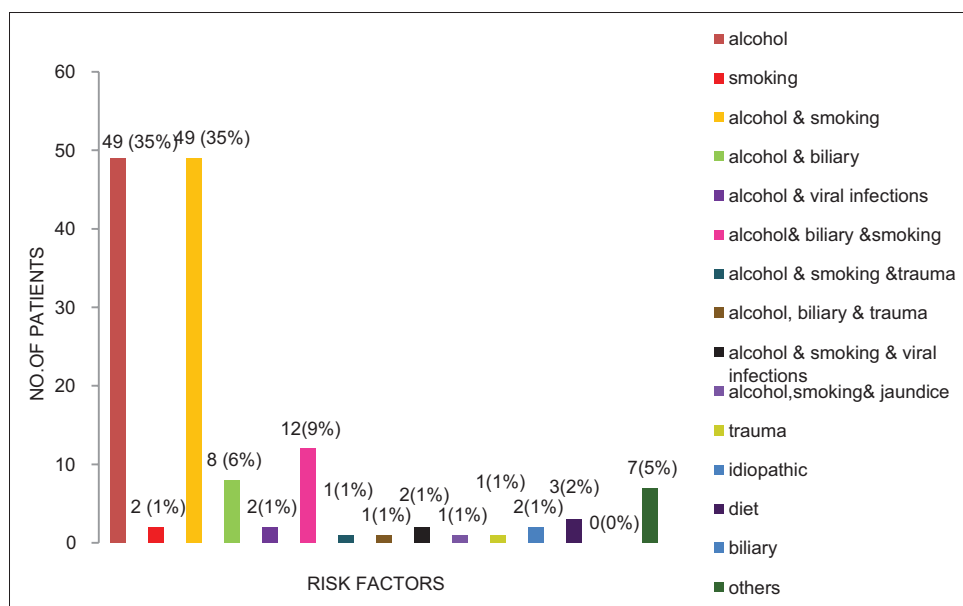

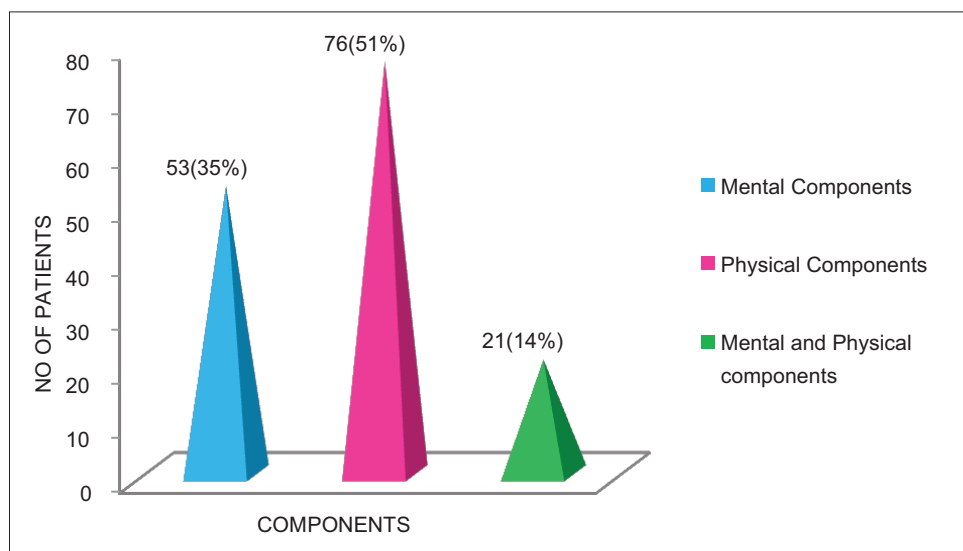**Fig. 1: Risk factors identified among pancreatitis patients**

Fig. 2: Effects on the health-related quality of life

Table 1: Demographic details and clinical profile of the patients

Parameter	Description	No. of patients	Percentage
Age	18–30 years	32	21
	31–50 years	91	61
	>51 years	27	18
Gender	Male	139	93
	Female	11	7
Type of pancreatitis	Acute	68	45
	Chronic	82	55
Past medical history	Acute	84	57
	Chronic	10	6
	Nil	37	25
	others	17	12
Complications	With	64	37
	With out	86	63
Clinical presentation	Abdominal pain	23	15
	Abdominal pain+vomiting's	58	39
	Abdominal pain+Vomiting's+weight loss	46	31
	Abdominal pain+Vomiting's+weight loss+jaundice	18	12
	Abdominal pain+vomiting's+Weight loss+jaundice +fever	5	3%
Treatment	Surgery	60	40
	Conservative therapy	90	60

Table 2: Individual domain wise segregation of SF-36 scores in study population

Components	Domain	Percentage of patient with corresponding scores			
		Lower score	Moderate score		Highest score
		Abnormal/worst QOL	Poor QOL		Better functioning
		0–25	26–50	51–75	76–100
Physical components	Physical functioning	2%	21%	57%	20%
	Physical role	59%	17%	8%	16%
	Bodily pain	15%	27%	40%	18%
	General health	10%	60%	29%	1%
Mental components	Emotional role	32%	41%	15%	12%
	Vitality	3%	52%	38%	7%
	Mental health	2%	27%	59%	12%
	Social functioning	2%	55%	39%	4%

QOL: Quality of life

32% of patients, 15% of patients representing severe intensity of pain, 10% of patients high effect on general health, lowest level of physical functioning was in 2% of patients, 2% of patients representing very high effect on emotional well-being, and 2% of patients were severe effect on social functioning.

In our study, extensive depletion was observed in limitation due to physical health, followed by loss of energy with fatigue and due to emotional problems. Similar findings were presented in study by Wehler. Moreover, in regarding to overall domain effect of QOL is seen in role due to physical health, followed emotional, energy, and fatigue. Similar results were obtained by Pezzilli *et al.* [32], Mokrowiecka *et al.* [30], and Wehler *et al.* [7,24].

In summarize, physical components of QOL (physical health, physical functioning, pain, and general health) were affected in (51%) of patients, followed by mental components of QOL (emotional problems, vitality, social functioning, and well-being). And finally, our study revealed that there is a profound deterioration in physical components of QOL. It may be because of their risk factors and lifestyle worsening the disease condition, the predominant abdominal pain and even the surgical treatment. Similar results were presented in the study by Mokrowiecka *et al.* [30], Wehler *et al.* [24], Pezzilli *et al.* [32], and Muller-Nordhorn *et al.* [33].

CONCLUSION

The current study highlights that the significant risk factors for development of pancreatitis were alcohol followed by smoking, which may contribute probable data for forecasting the occurrence of pancreatitis. It demonstrates that pancreatitis remarkably diminishes the patient's HRQoL which predominantly shows negative impact on physical health. As a clinical pharmacist, it is our role to provide counseling sessions to prevent the further diminishment of QOL. From a practical point of view HRQoL deserves more attention in chronic diseases (pancreatitis). This study suggests that there is a need to be aware of physical and mental problems of patients with pancreatitis.

ETHICAL APPROVAL

Ethical approval was secured from the Department Chiefs of General Surgery and General Medicine of SVRRGGH, Tirupati by Institutional Ethical Committee Sri Padmavathi School of Pharmacy. Proposal No: SPSP/2019-2020/POD2.

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