

# A Study on Nutritional Assessment of Oriental Cholangio Hepatitis Patients in Kashmir

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**Abstract:** *Oriental Cholangiohepatitis (OCH) is a chronic disease characterized by repeated suppurative infection of the biliary tract as a result of stones and strictures in the bile ducts. The exact pathogenesis of Oriental Cholangiohepatitis (OCH) is a parasitic infestation and malnutrition theory. As such, the present study "Nutritional assessment of Oriental Cholangiohepatitis (OCH) patients" was carried out on 50 consecutive patients in the OPD and ward of Gastroenterology Department at SKIMS Soura, for assessing the nutritional assessment, dietary pattern and attitude towards dietary management of Oriental Cholangiohepatitis (OCH) patients. The information was collected through proforma and an interview method. From the study, it was concluded that majority of patients were females, age group of 35-45 years and normal weight BMI. The disease is more prevalent in rural areas, mostly in low socio-economic group and is more common in married ones. Laboratory results have shown that hyperbilirubinemia, high alkaline phosphatase level and high serum total protein levels are present in Oriental Cholangiohepatitis OCH patients but there were normal Hb and albumin levels especially in the age group of 35-45 years. All had histories of fever, chills, vomiting, anorexia, headache, pain, and jaundice. Consumption pattern of calories, proteins and fat intake by the patients were observing much less than the standard values which is main responsible for the cause of Oriental Cholangiohepatitis. It was found that 37% of the patients considered that both diet and drug control is very important for management of Oriental Cholangiohepatitis.*

**Keywords:** cirrhosis, cholangitis, stricture, bilirubinemia.

## 1. Introduction

Oriental cholangio hepatitis is a chronic disease characterized by repeated suppurative infection of the biliary tract. It is also sometimes called Recurrent Pyogenic Cholangitis, Asiatic Cholangio hepatitis, Primary choledocholithiasis or just Cholangiohepatitis. Patients characteristicly have large friable brown calcium stones in both intra and extra hepatic bile ducts.<sup>(5)</sup> Wen and Lee confirmed that most patients were under nourished and in low socio economic group.<sup>(12)</sup> Most patients are between in the ages of 25 and 80 years.<sup>(14)</sup> It is very common in Hong Kong and the Pearl River Delta. It is seen at all ages above infancy, equally in both sexes and in all grades of severity<sup>(4)</sup>. The exact pathogenesis of OCH is agreed upon two theories as Parasite theory and Malnutrition theory. In parasite theory round worms, (*Ascaris lumbricoides*), liver flukes (*Clonorchis sinensis*) cause the initial injury to the biliary epithelium.<sup>(7, 6)</sup> As in malnutrition theory repeated attacks of bacterial gastroenteritis leading to episodes of portal bacteremia. In addition the low protein diet consumed by the indigent population is thought to result in deficiency in bile of glucaro 1:4 lactone, an inhibitor of an enzyme  $\beta$ -glucuronidase.  $\beta$ - Glucuronidase produced by bacteria infecting the bile deconjugates water soluble bilirubin glucuronidase, and unconjugated bilirubin precipitates with calcium ions to form insoluble calcium bilirubinate, the major component of pigment stones<sup>(8)</sup>. Protein calorie malnutrition is a syndrome considered as progressive loss of both lean body mass (protein) and adipose tissue (calorie). Significant changes in the metabolism of protein, carbohydrate and lipids appear simultaneously the consumption of higher energetic demand.<sup>(2)</sup> The most common clinical presentation is that of Charcot's triad. A typical attack starts with fever, shaking, right upper quadrant abdominal pain, chills. Jaundice appears 1-2 days later. Usually, it takes 1-2 weeks for a moderate attack and longer

for a more severe attack. If the attack is severe, patients can be in septic shock, and death is imminent unless an operation is performed.<sup>(13)</sup> Fever is often less than 40 °C. If the temperature is high septicemia or liver abscess must be suspected. Pruritus is rarely a complaint and the patient is aware of the passage of tea coloured urine.<sup>(3)</sup>

The aim of this study was: (A) to assess the nutritional status of OCH patients by using Anthropometric measurement, Biochemical parameter, Clinical signs and Dietary assessment technique and (B) to nutritionally counsel the patients.

## 2. Methods

### 2.1 Patients

A cross sectional study was conducted with 50 OCH patients in SKIMS soura, Srinagar. The inclusion criteria were adults aged 15 years and above, admitted for the reason of stones in bile duct.

### 2.2 Anthropometry

Weight was measured using a digital weighing scale and height with a wall- mounted stadiometer. The Body mass index was calculated using the formula proposed by quetelet<sup>(16)</sup> BMI = weight (kg) /height (meter)<sup>2</sup> were considered for nutritional status. Although these measures of OCH patients were compared with healthy population.

### 2.3 Clinical Criteria

Oriental cholangio hepatitis was diagnosed based on combination of clinical features and blood profile.

**2.4 Dietary Intake and Assessment**

Assessment of individual patient’s oral intake during hospitalization was determined by the dietary recall method or 24 hour recall method and their dietary history and food habits.

**2.5 Statistical Analysis**

A descriptive analysis was performed through mean values and standard deviation for continuous variables-Chi-square test of Mc Nemar was used in the comparison of the nutritional state. Statistical significance was assumed at a P value of < 0.01

**3. Results**

The sample is composed of 50 patients mean age of 35-45 years ranging from 15-75 years, 37 (74 %) females and 13 (26%) were males, 39 (78%) of the patients are residing in the rural areas and 11 (22%) were in the urban areas. overall, 36(72%) of the patients were well nourished, 8(16%) were under weight, 4 (8%) were grade 1 obesity and 2 (4%) were grade 2 obesity.<sup>(15)</sup>

Differences in biochemical parameters in OCH patients were normal hemoglobin levels in majority(58%) as significant difference was observed at ( $x^2 = 17.52$  P < 0.01). However bilirubin levels and alkaline phosphatase levels (ALP) were high as depicted in (Table 1) as significant difference was not observed with respect to bilirubin ( $x^2 = 2.00$ , P < 0.01) while as significant difference was observed with respect to ALP ( $x^2 = 8.00$ , P < 0.01)

**Table 1: Bilirubin and ALP levels of patients as per age distribution**

Age	15-25 yrs	25-35 yrs	35-45 yrs	45-55 yrs	55-65 yrs	65-75 yrs
<b>1. Bilirubin level</b>						
0.2-1.5mg /dl	10%	15%	26.67%	15.60%	20%	10%
>1.51.5(mg/dl)	6.67%	30%	26.67%	16.67%	16.67%	3.33%
<b>2. AIP</b>						
a) 70-320 µg/dl	7%	27%	34%	12%	12%	7%
b) >320 µg/dl	9%	24%	24%	17%	24%	6%

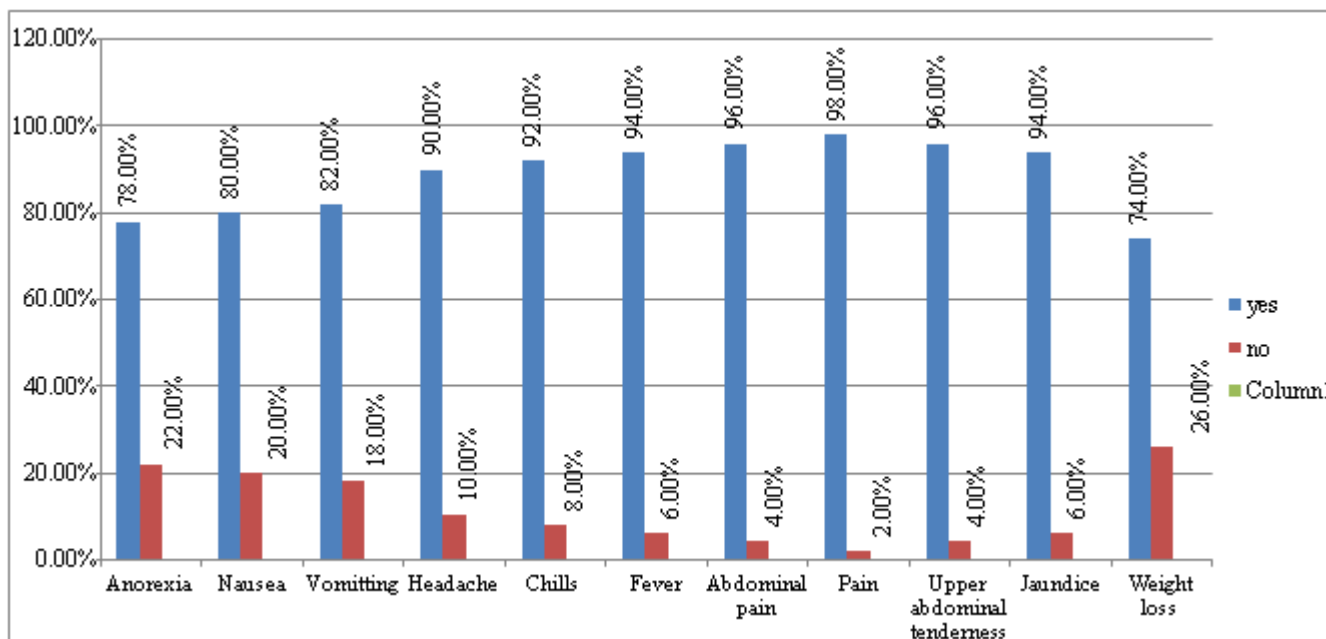
It has been observed that there is a positive correlation between monthly income with BMI and total protein and negative correlation of monthly income with Hb, Bilirubin and Glucose and relation with other variables are shown in the (Table 2).

	0.799	0.004			
<b>Bilirubin</b>	0.107	0.170	- 0.148		
	0.460	0.238	0.305		
<b>Glucose</b>	0.060	- 0.084	-0.140	0.019	
	0.651	0.564	0.330	0.894	
<b>TP</b>	0.118	- 0.021	0.010	- 0.159	0.088
	0.413	0.886	0.943	0.269	0.544

**Table 2: Co- efficient of correlation of family monthly income vs. BMI, Hb, Bilirubin, Glucose and serum Total protein.**

	Monthly income	BMI	Hb	Bilirubin	Glucose
<b>BMI</b>	0.063				
	0.664				
<b>Hb</b>	0.037	0.397			

The clinical assessment and signs of studied OCH patients showed that majority of the patients complained of fever, Jaundice, chills, pain, and weight loss during their illness period are depicted in (Figure 1)



**Figure 1: The clinical characteristics of OCH patients**

The mean and minimum intake pattern of different nutrients (calories, Proteins and Fats) as per taking their 24 hr recall method which was much lower than the ICMR recommendations are shown in the (Table3).

**Table 3:** The average mean consumption patterns of nutrients

Nutrients	Sample size	Mean	Standard deviation	Min.	Max.	Range
Calories (Kcal)	50	1307.4	604.6	96.7	3108	3011.3
Protein (g)	50	36.54	15.40	9.9	90	80.1
Fats (g)	50	16.32	13.12	2.37	70	67.63

#### 4. Discussion

This study of nutritional assessment of Oriental Cholangiohepatitis patients in Kashmir has several limitations. The sample size was small, resulting in some limitations with the relevance of the results from the study. Another limitation of this study was the failure to include the control group.

The OCH was more seen in females as per this study which is supported by Misra and Manisha<sup>(9)</sup> which shows that all studied 14 OCH patients were females. The prevalence of overweight was not identified in the studied population, when analyzing their Body Mass index (BMI), which may present a strong relation with the poor nutrition condition of the patients and due to the presence of clinical signs.

Through biochemical parameters 30-35 patients in this study were have high levels of bilirubin and ALP levels as in the study conducted by Carmona and Pereira<sup>(1 & 11)</sup> the results were same.

In the study conducted by Navicharen and Carmona<sup>(10 and 1)</sup> patients are presented with abdominal pain, jaundice, head ache, anorexia, nausea and chills which were same observed as per this study.

The study used the reference values for nutritional assessment with healthy individuals and the difference was observed in the studied OCH patients who were below the standard values in terms of calories, Proteins and Fats. This is the main responsible factor for causing the disease Oriental cholangio hepatitis (OCH).

#### 5. Conclusion

The assessment of nutritional status of OCH patients show that it is more prevalent in females residing in rural areas from low socio economic group. All signs are present and bilirubin and ALP levels were high in studied patients. The nutrient intake was very low which is the main responsible factor.

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