

ABSTRACT

A STUDY ON “CORRELATION OF SERUM PROLACTIN LEVEL TO CHILD PUGH SCORING SYSTEM IN CIRRHOSIS OF LIVER IN ASSESSING THE SEVERITY OF THE DISEASE”

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BACKGROUND:

The main goal of this study was to evaluate the diagnostic and prognostic significance of serum prolactin concentration in cirrhosis in determining the severity of hepatic disease and its correlation with CHILD PUGH score.

Prolactin secretion follows a pulsatile pattern with characteristic nocturnal rise. In patient with cirrhosis, associated with elevated 24 hours prolactin level and loss of circadian rhythm. Patients with end-stage liver disease have several endocrine dysfunctions, which include alterations in the functioning of the hypothalamic-pituitary-gonadal axis and the serum levels of sex hormones and that these disorders are completely reversed after liver transplantation. In cirrhosis, excess production of SHBG in liver and increased prolactin levels were detected while exploring the cause of gynecomastia and

high level of liver estrogen receptors was added to the direct suppressing effect of estrogen on Leydig cell functions. Decompensated liver function leads to an alteration in the type of amino acids entering the central nervous system. Circulating concentrations of aromatic amino acids have been found to increase leading to an increase in the synthesis of false neurotransmitters such as octopamine and phenylethanolamine. These false neurotransmitters may inhibit the dopamine release contributing to hyperprolactinemia. Cirrhosis can be staged clinically. A reliable scoring system is the modified CHILD PUGH scoring system. It ranges from 5 to 15. Thus comparing the serum prolactin level with the Child pugh scoring system in assessing the severity of the liver disease and predicting the risk of complications.

AIM OF THE STUDY:

PRIMARY AIM

1. To study the prevalence of hyper prolactinemia in cirrhosis.
 2. To assess the relation between serum prolactin levels and disease severity, predicting complications in patients with cirrhosis.
 3. To compare the efficacy of serum prolactin to that of child pugh scoring system in cirrhosis
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MATERIALS AND METHODS

STUDY POPULATION: The study will be conducted on 100 patients admitted to Government Rajaji Hospital & Madurai Medical College during the study period from February 2017 to July 2017. **Inclusion criteria:** All patients with cirrhosis of liver. **Exclusion criteria:** History of chest wall trauma, Cranial surgery/ irradiation Pituitary or hypothalamic disease , Chronic renal failure, Herpes zoster, Seizure disorder and Drugs. **Data collection** Informed consent will be obtained from all patients to be enrolled for the study. The patients are selected based on clinical examinations, biochemical tests and ultrasound abdomen. Patients were subjected to routine cirrhosis work up. In all cirrhotic patients serum prolactin level is measured and it is correlated with Child Pugh score in assessing the disease severity and the risk of complications.

RESULT:

Prolactin level in hepatic dysfunction is always controversial. Dopamine is limited by the fact that it cannot be measured in any of the body fluids or brain. Since dopamine exerts negative control over prolactin, few studies from the west have shown prolactin to be a prognostic marker.[1,2]

Elevation of prolactin is attributed mainly to the fall in dopamine levels in the tuberoinfundibular tract. Hormonal disturbance in cirrhosis has been evaluated by few researchers, and the studies have established lower T3 and cortisol levels with raised prolactin in the serum.[3] Decompensated liver function leads to an

alteration in the type of amino acids entering the central nervous system. Circulating concentrations of aromatic amino acids have been found to increase leading to an increase in the synthesis of false neurotransmitters such as octopamine and phenylethanolamine. On comparing the Prolactin level, with the various complications of chronic liver disease like Ascites , oesophageal varices and hepatic encephalopathy we are able to find a significant correlation with the severity of the disease. The mean prolactin value found to be 56ng/ml in patients with massive ascites ; and in patients with grade 3 or 4 varices it is found to be around 55 ng/ml and 58 ng/ml respectively. Thus it has better correlation with severity of disease in our study population. A similar correlation of mortality to serum prolactin levels was observed by McClain *et al.*[4] and Sharma *et al.*[5] with a higher risk of mortality with serum prolactin values of >50 ng/ml. Prolactin release in human beings is normally associated with a pulsatile pattern, but a constant 24 h elevation has been found in patients with cirrhosis liver.[3] Cases of hypogonadism have also been reported in patients with cirrhosis attributing to hyperprolactinemia.[5]The prolactin value found to be significantly correlate with the CHILD PUGH CLASS in assessing the severity of the disease.Mean prolactin value was found to be , 8.0, 26 and 56 ng/ml in Child Pugh Class A ,B and C found to be increasing correlating with the severity of the disease.

In patients with and without encephalopathy, mean prolactin value found to be 56ng/ml and 8ng/ml .Thus prolactin level founds to be significantly

correlated with the patients having encephalopathy. Also, the authors found out a direct correlation between the clinico-biochemical severities of the condition and mortality. Thus prolactin level not only help in assessing the severity of the disease , it also helps in predicting the complications at an earlier stage of the disease process.

CONCLUSION:

Prolactin level rises in hepatic cirrhosis ,with the loss of normal circadian rhythm. Since the dopamine level cannot be directly measured in the body fluids , we used prolactin to measure the severity of the liver disease, as it is normally kept under the check of dopamine .Prolactin level significantly correlates with severity of the liver disease and predicting the risk of complications and helpful in preventing them. The rise in prolactin level also had a synonymous relationship with the Child Pugh Scoring system thus validating the use of Prolactin as a prognostic marker in hepatic cirrhosis.

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