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RESEARCH ARTICLE

A STUDY OF ECHOCARDIOGRAPHIC CHANGES IN PATIENTS WITH CIRRHOSIS OF LIVER

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Abstract

Background/Aims: Cirrhosis is associated with a significant number of cardiac abnormalities; but, the information available is scanty about the changes associated with it in India. Which include increased cardiac output, increased wall thickness of cardiac chambers, left ventricular diastolic dysfunction, and PAH. These cardiac abnormalities in patients with Cirrhosis have been termed as 'Cirrhotic Cardiomyopathy.' Cirrhotic Cardiomyopathy may be a significant cause of morbidity and mortality in patients with Cirrhosis. With the advent of increased liver transplantation in India, this entity may have an impact on transplantation success. The present study aims to evaluate the cardiac abnormalities in patients with cirrhosis using 2D Echocardiography to detect the occurrence of LV dysfunction, pulmonary hypertension, pericardial effusion, and to assess the contribution of cardiac dysfunction on mortality, if any.

Methodology: Thirty patients with Cirrhosis (alcoholic and non-alcoholic) were enrolled. Thirty age and sex-matched controls without cardiovascular disease were included for comparison. Data collection was done by clinical history taking, examination, and investigations. All subjects underwent Echo study was at 0, 6 and12 months and controls at the start of the study.

Observations and Results:

1. The mean age of study group was 54.5 ± 15 yrs; among them, males constituted 93 % of the study population, the majority of patients were in Child class B (43.3%), and Child A (40%). None of the study population died during follow up.
2. The salient Echocardiographic abnormalities noted in the study population were a) Interventricular septal thickness showed significant change compared to control (9.80 ± 1.06 vs. 8.00 ± 1.00mm mm).

b) Doppler echocardiography detected elevated pulmonary arterial pressure (PAP) in the study population compared to control (20.73 ±2.43mm Hg vs.18.26 ± 2.1mm Hg).

c) Diastolic dysfunction occurred in the form of increased Deceleration time (223.17 ± 13.93 ms vs. 190.83 ± 14.0ms) and increased E: A ratio (1.10±0.1 vs. 1.04±0.12) was noted in subjects with Cirrhosis. Two of the study subjects had pericardial effusion. (6.7%)

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3. There is no evidence of systolic dysfunction noted in the study population.
4. There is no correlation between the severity of Cirrhosis and echocardiographic changes.
5. There were no differences in echo parameters among patients with alcoholic or non-alcoholic etiology of Cirrhosis.
6. There was no fatality recorded due to cardiac dysfunction

Conclusion:

1. This study demonstrates that Indian patients with cirrhosis do have diastolic dysfunction. In the absence of other cardiac disease risk factors, this dysfunction can be attributed only to cirrhotic cardiomyopathy.
2. Echocardiography plays a significant role in detecting early cardiac changes in cirrhosis; however, these changes do not seem to be a predictor of increased mortality in cirrhosis patients.

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