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Case Report

Nephrogenic Ascites – A Poorly understood Syndrome

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ABSTRACT
Nephrogenic ascites is a rare condition with a grave prognosis and an unknown but probably multifactorial cause. There is limited prospective data on nephrogenic ascites from the Indian subcontinent. Nephrogenicascites can be cured by strict salt restriction, effective dialysis and persistent ultrafiltration in contrary to general belief.
Keywords: *Nephrogenicascites.*

INTRODUCTION

Nephrogenic ascites is a condition characterized by the presence of massive ascites in a patient with end stage renal failure in the absence of any other explanation. Nephrogenic ascites is characterized by a marked center-to-center variability in incidence (0.7 to 20%) wide age range of onset (1.1 to 7.1 year; mean, 42 year), apredominant male sex (male: female = 2:1), no race predilection (white: black = 1:1). Nephrogenic ascites is associated with a grave prognosis. The average survival ranges from 7 to 10.7 months. Over one-third of patients develop cachexia, and most patients die with persistent ascites. CAPD, peritonovenous shunt and renal transplantation appear to be effective in controlling ascites formation. Nephrogenic ascites can be cured by strict salt restriction, effective dialysis and persistent ultrafiltration. We report here the successful application of repeated ultrafiltration and salt restriction in the treatment of nephrogenic ascites in twenty of our dialysis patients.

AIMS AND OBJECTIVES

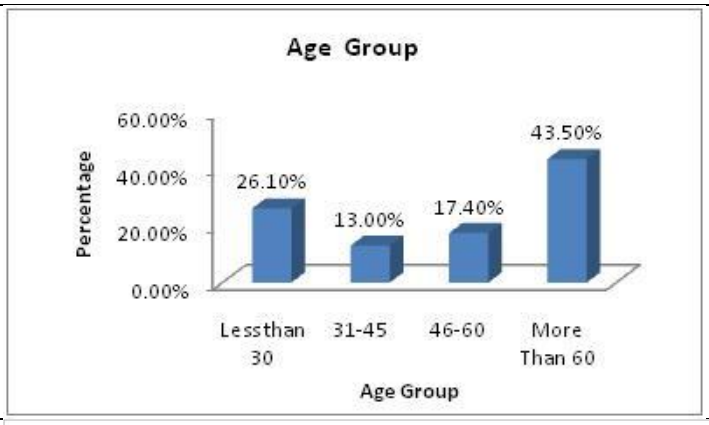
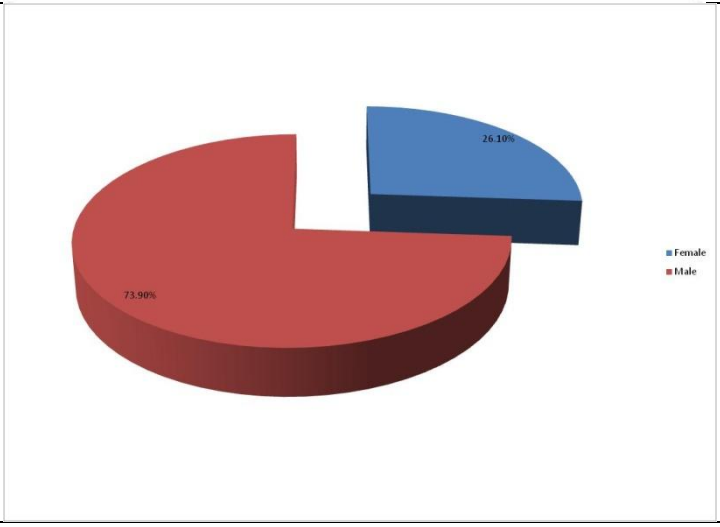
1. To Study the Prevalence of Nephrogenic Ascites in Our Centre.
2. To Study the Etiology, Clinical and Laboratory Profile of These Patients.

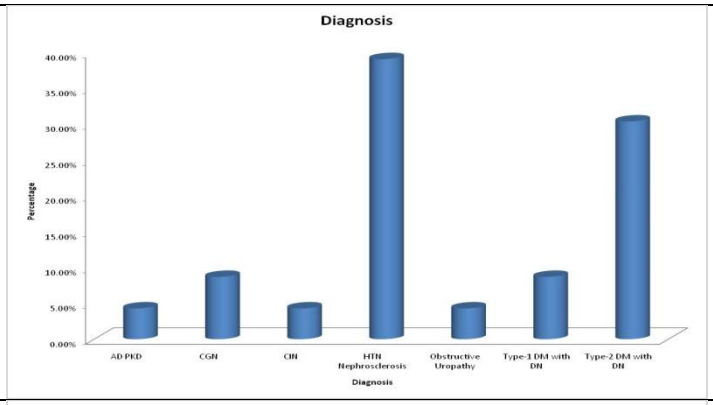
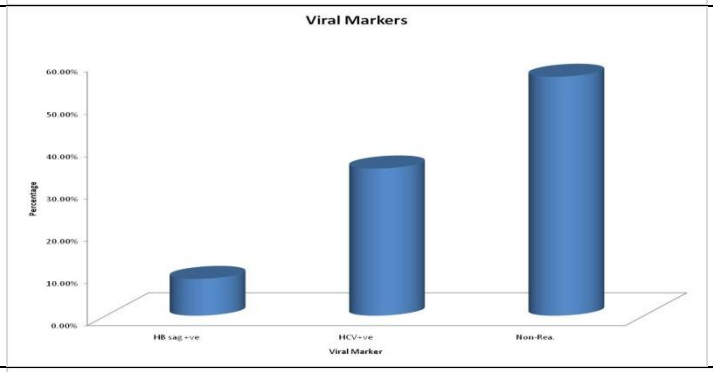
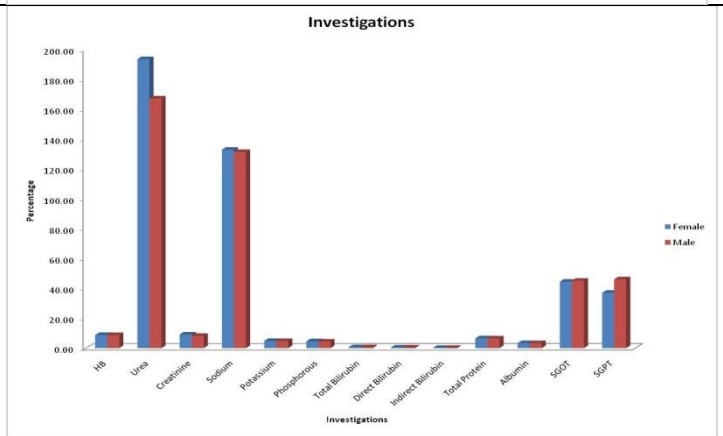
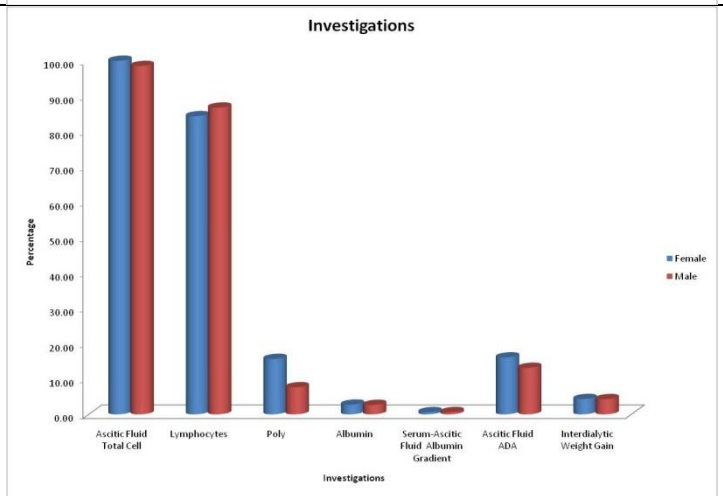
MATERIAL AND METHOD

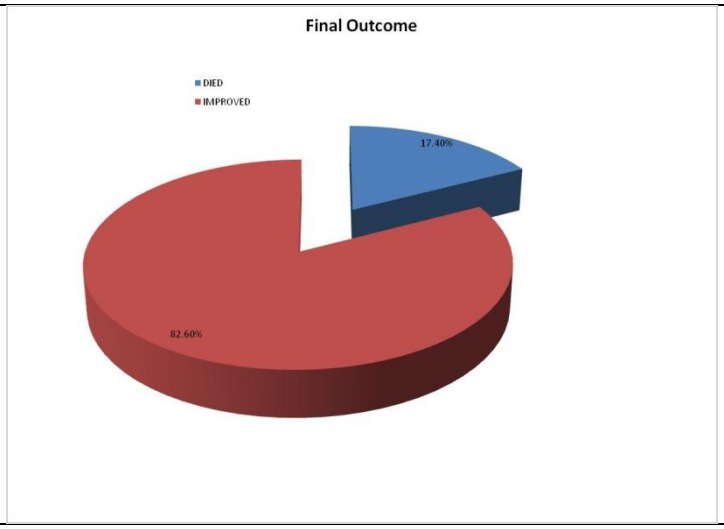
This prospective study was conducted in the Department of Nephrology at Dayanand Medical College and Hospital, Ludhiana. The study period was from JUNE 2013 to MAY 2014.The diagnosis of nephrogenic ascites was based on clinical history, physical examination biochemical investigations including thyroid profile,USG whole abdomen and ascitic fluid analysis. In this study patients who were coming to our dialysis centre biweekly for more than 6 months were included(n=150). Patient who have cirrhosis, tubercular ascites and ascites due to any other causes and who had spontaneous bacterial peritonitis were excluded.

RESULTS

The prevalence of nephrogenic ascites was 15% (23/150) in our study. It was largely found in male population (3:1) with mean age of 60 +/− 5. Prevalence of nephrogenic ascites was found to be higher in hypertensive patients (39.1%) whereas diabetics accounted for 30% of the population. Prevalence of nephrogenic ascites was higher in HCV positive patients (34.8%) as compared to HBsag positive patients (8.7%). Ascitic fluid was straw in colourprimarily exudative in nature with serum –ascites albumin gradient < 1.1 and negative for gram stain and culture.Most of the patients frequently present with moderate to massive ascites, minimal ankle oedema, cachexia and history of dialysis associated hypotension.

	Age distribution of patients
	Sex distribution of patients

	Diagnosis of patients
	Viral Marker Status of patients
	Investigations of patients
	Ascitic Fluid Analysis of patients



Final Outcome of patients

Patient Appearance in Nephrogenic Ascites

DISCUSSION

Nephrogenic ascites is an entity that manifests itself as refractory ascites in patients with end stage renal failure, where portal hypertension, infections and malignant processes per se have been excluded. Most of these patients are undergoing haemodialysis [(1)]. Neither the exact cause nor the pathogenesis of the ascites formation is clearly understood. However leaky peritoneum, disturbed lymphatic drainage of the peritoneal fluid, chronic volume overload with hepatic congestion issuggested in the pathogenesis. Heart failure and hypoalbuminemia may be contributing factors [(5)]. Interdialytic weight gain of these patients is often excessive [(6)]. Patients frequently present with hypertension, moderate to massive ascites, minimal ankle edema, cachexia and history of dialysis associated hypotension [(2)]. High protein content, low serum-ascites albumin gradient and low leukocyte count are the generalproperties of the ascitic fluid [(1)].

Treatment of nephrogenic ascites is controversial. Gluck et al [(3)] has reported that continuous ambulatory peritoneal dialysis, peritonovenous shunt and renal transplantation appear to be effective in controllingascites formation. Cintin et al [(5)] reported that strict fluid control, intensive haemodialysis, high protein diet, intravenous albumin infusion,intraperitoneal steroid injection and paracentesis as well as implantation of peritoneal pump have all been ineffective in the treatment.

On the other hand, Han SG et al [(1)] reported that some haemodialysis patients with nephrogenic ascites were successfully treated by daily haemodialysis within 3 weeks' time. Similarly Töz et al [(4)] reported that dilated cardiomyopathy and ascites in a 16 year old haemodialysis patient was completely resolved by persistent ultrafiltration in two months' time.

Conflicting results are probably due to ignorance of importance of salt restriction and ultrafiltration rate. To increase the duration and/or number of haemodialysis or ultrafiltration sessions may be more appropriate than to increase ultrafiltration rate. In adherence to salt restriction and excessive

weight gain in those patients generally results in excessive ultrafiltration efforts. As the amount of fluid drawn increases, number of hypotension episodes increases owing to inadequate fill of the intravascular compartment, in turn necessitating fluid infusion or termination of dialysis. Poor cardiac status further augments hypotension episodes occurring during ultrafiltration. Additionally increased intravascular hyper osmolality, again due to delayed filling of intravascular compartment, causes increased thirst reflex and further volume overload. As a result increased number of hypotension episodes and intravascular hyper osmolality, both being due to excessive ultrafiltration rate, creates a vicious cycle and augments volume overload.

Therefore strict saltrestriction and prevention of excessive weight gain are atleast as important as persistent ultrafiltration in thetreatment of nephrogenic ascites.

CONCLUSION

Nephrogenic ascites is a rare condition with a grave prognosis and an unknown but probably multifactorial cause. There is limited prospective data on nephrogenic ascites from the Indian subcontinent. Nephrogenic ascites can be cured by strict salt restriction, effective dialysis and persistent ultrafiltration in contrary to general belief.

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