

Dialysis Ascites - Reinfusion of Unmodified Ascitic Fluid

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As the number of patients on maintenance hemodialysis in our country is increasing, long term complications of hemodialysis are emerging. Dialysis ascites, a serious sign of failure of dialysis regimen, having a poor prognosis, has a mean survival time of seven months^{1,2}. A case of dialysis ascites, managed by reinfusion of unmodified ascitic fluid is being reported.

Case Report

A 57 years old housewife with end stage renal disease (ESRD) secondary to diabetes mellitus and hypertension, was started on maintenance hemodialysis in March, 1992. On admission in August, 1992, she weighed 58.8 kg, had hypertension and signs of fluid overload. With hemodialysis she was stabilized at a dry weight of 48 kgs. As she was not disciplined regarding her diet and fluid intake, therefore, inter-dialysis weight gain was 3-3.5 kgs which at times was 4 kgs. In April, 1993 she developed ascites which gradually increased leading to painful and disabling abdominal distention. There was no sacral or pedal oedema and there were no signs of fluid overload. Her liver function tests were normal, serum albumin was 3.2 gm/dl. Abdominal ultrasonography was normal except large amount of free fluid in the abdomen. Chest x-ray showed cardiomegaly, echocardiography revealed an ejection fraction of 54%, mild secondary mitral regurgitation, normal pericardium and no pericardial effusion. Ascitic fluid analysis revealed a protein concentration 2.8 gm/dl, total cell count 20/cumm, all were lymphocytes, Gram's and ZN staining showed no micro-organism, the cultures were sterile and there were no malignant cells. She was labelled as a case of dialysis ascites. Intensive ultrafiltration was attempted but was futile. From September, 1993 she was not tolerating dialysis and frequently developed hypotension necessitating saline infusion. In December 1993 reinfusion of unmodified ascitic fluid was started. The patient was called a day prior to scheduled dialysis. Ascitic fluid was collected and stored under strict aseptic conditions. During dialysis ascitic fluid was reinfused and ultrafiltration adjusted considering the volume of fluid refused. Six sessions were performed and 13.2 litres of ascitic fluid was refused. The weight of the patient decreased from 51.8 to 38 kgs, with marked reduction in ascitic fluid. The patient remained normotensive throughout dialysis and ultrafiltration targets were achieved. Her serum albumin increased from 3.2 gm/dl to 4.4 gm/dl (Figure 1).

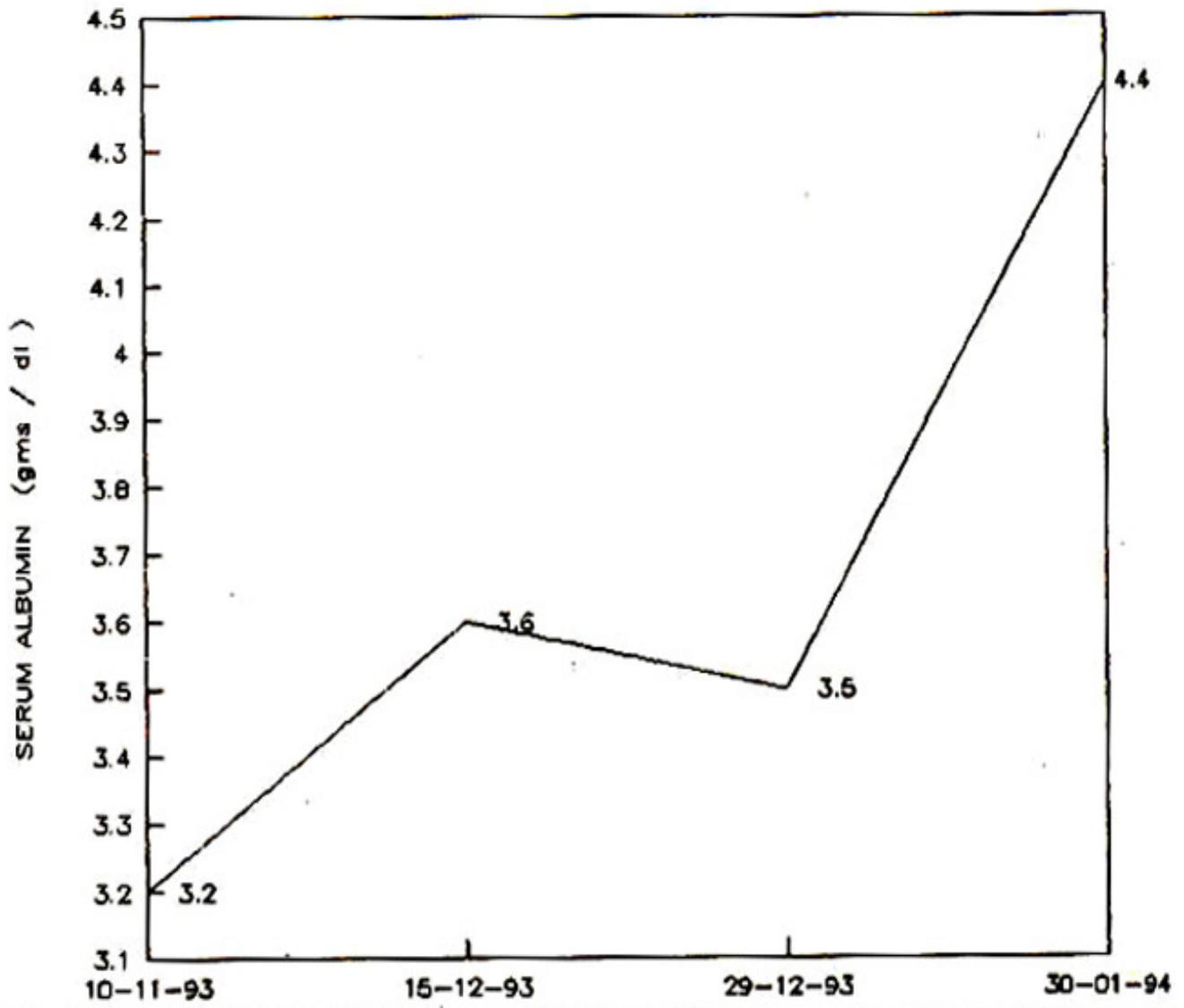


Figure 1. Increase in serum albumin.

Her predialysis serum creatinine which was around 7.5 mg/dl decreased to 6.1 mg/dl (Figure 2).

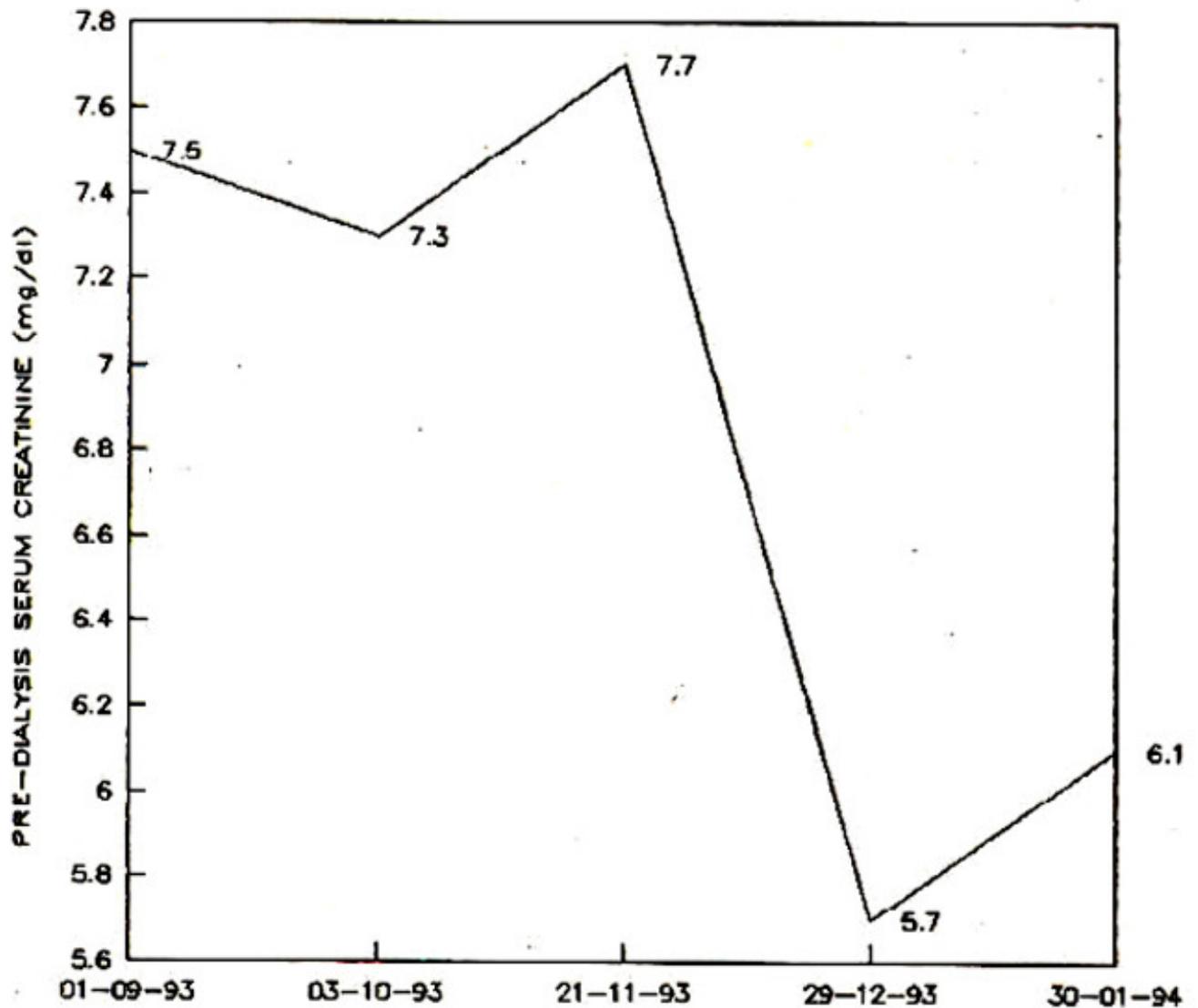


Figure 2. Decrease in serum creatinine.

Discussion

Dialysis ascites was described in 1970³, as a complication of long term maintenance hemodialysis. It is a diagnosis of exclusion⁴. The exact cause of ascites is not known, high fluid intake leading to long term and marked over-hydration and peritoneal irritation from uremic inflammation are thought to be the causes⁴. Past history of peritoneal dialysis is considered to have an etiological relationship with the development of ascites, however, this is not accepted by others⁵. The present case was never dialysed peritoneally. Time interval between initiation of hemodialysis and development of ascites is variable⁵. It was thirteen months in this case. Intensive ultrafiltration during bicarbonate dialysis⁴, intravenous administration of albumin², strict salt and water restriction, renal transplantation², nephrectomy, intravenous administration of ascitic fluid during hemodialysis^{5,6} intraperitoneal administration of non-absorbable steroids⁸, peritoneovenous shunting⁹ and resort to peritoneal dialysis have been described as therapeutic modalities. Reinfusion of unmodified ascitic fluid was chosen because of ease and

economy. With six sessions of reinfusion there was a dramatic reduction in weight of the patient and the patient who was bedridden and in great discomfort was up and about after this therapeutic procedure. Ultrafiltration targets were achieved easily during and after the procedure. For the last two months there are no episodes of hypotension during dialysis, she is stable at a dry weight of 38 kgs. The decrease in her predialysis serum creatinine indicates better clearance during dialysis. No complication like febrile reaction, peritonitis, bacteremia or bleeding episodes were observed. If done meticulously, reinfusion of unmodified ascitic fluid during hemodialysis session in dialysis ascites is a safe, simple and effective procedure, which breaks the vicious cycle of ascites formation and produces long term relief.

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