Effects of type of dialysate on cardio-hemodynamic stability & erythropoietin response in CKD

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Objective: Effect of 2 types of dialysate on hemodynamic stability & efficacy of erythropoitin was evaluated in 30 patients of CKD on maintenance dialysis.
Methods: Thirty adult patients (15 patients in group A using acetate containing bicarbonate dialysate and 15 in group B using citrate containing bicarbonate dialysate) of end stage renal disease (ESRD) undergoing twice weekly hemodialysis were included in the study and were administered Erythropoietin (rHuePo) 6000 I.U. subcutaneously following each session of dialysis and injectable Iron 100 mg once weekly. Hemodynic stability was monitored during dialysis and hematological parameters were recorded at baseline & then every month.
Results: The use of citrate rather than acetate as an acidifier in bicarbonate haemodialysis reduced the symptoms during dialysis like vomiting, chills, headache, shortness of breath, hypocapnia with improved correction of acidosis. Hemodynamic stability (decreased intradialytic fluctuations in blood pressure was higher in the citrate schedule. Moreover, patients who used to develop intradialytic hypertension before inclusion experienced a larger reduction in blood pressure. The need for intervention by the medical staff was slightly less in citrate containing group. The rise in hemoglobin and hematocrit in both the groups was statistically significant ($p < 0.0001$). ESR fell significantly ($p < 0.0001$) in group B after 3 months. Baseline KT/V was significantly higher in group B as compared to group A ($p < 0.01$). There was steady and gradual decline in blood urea, serum creatinine, serum uric acid and serum phosphate in group B.
Conclusion: Citrate containing bicarbonate dialysate has significant effect in reducing inflammatory parameter & in improving hemoglobin and achieved better hemodynamic stability during dialysis.

Assessment of short term effects of sildenafil therapy in patients with secondary pulmonary hypertension

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Background: It is well proven that sildenafil improves pulmonary hemodynamics and exercise capacity in patients with primary pulmonary hypertension. However, the drug armamentarium for secondary pulmonary hypertension is limited. Sildenafil may also be helpful in this subgroup. Certain studies have shown promising results but none of the magnitude to promulgate new recommendations.
Methods: In this double-blind, placebo-controlled study, we randomly assigned 106 patients with symptomatic secondary PAH (idiopathic DCMP, Heart failure with preserved EF, COPD, and other lung parenchymal disease, valvular heart disease) to placebo or sildenafil (53 in each group). Sildenafil was given orally 25 mg TID for 6 weeks. The primary end point was the change from baseline to week 6 in the distance walked in 6 minutes. We also assessed clinical improvement (improvement in 6 minute walk test, and NYHA functional class, change in Borg dyspnoea index) and change in hemodynamic parameters (PASP, LVEF).
Results: Of the 106 patients, included secondary PAH was due to COPD in 21 (19.8%), Valvular heart disease in 53 (50%), Heart failure with preserved EF in 16 (15%), idiopathic DCMP in 11 (10.2%) and other lung parenchymal diseases in 5 (5%). The mean increase in the distance walked after 6 weeks of therapy was 54 m in sildenafil group and 13 m in placebo group $p = 0.04$. In the sildenafil group significantly greater number of patients improved by at least one functional class (23% vs 11%, $p = 0.003$). The mean NYHA class at 6 weeks was 2.0 ± 0.2 in the sildenafil group versus 2.8 ± 0.4 in the placebo group, $p = 0.02$. The mean PASP significantly decreased in the sildenafil group at 6 weeks (48 ± 6 mmHg), compared to placebo (58 ± 6 mmHg), $p = 0.02$. LVEF was higher in the sildenafil group, $60 \pm 10\%$ versus $55 \pm 10\%$ in the placebo group, but did not reach statistically significant difference.
Conclusion: Sildenafil improves exercise capacity, functional class, and hemodynamics in patients with PAH. PDE-5 inhibition may represent an important therapy for patients with secondary PAH if, the benefits observed in our study are confirmed in larger clinical trials.

Percutaneous transvenous retrieval of intracardiac dislocated chemoport catheter

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Background: Chemoport is a central venous infusion system commonly used in cancer patients for chemotherapy and parenteral nutrition. Detachment with embolization of chemoport catheter to the heart is a rare and serious complication and warrants immediate retrieval by surgery or percutaneous approach.
Method: A 50-year-old lady suffering from left breast cancer had a chemoport implanted in right subclavian vein. After two sessions of chemotherapy the chemoport stopped functioning and got infected. Chest radiograph revealed the distal portion of the catheter had detached and the catheter fragment had embolized to the right atrium. Portal segment of the infected chemoport was removed surgically. Detached catheter fragment in right atrium was retrieved by inserting 12 French (F) sheath into femoral vein. As both ends of catheter fragments were not free to use the loop snare technique, a pigtail catheter was looped around the chemoport catheter and pulled down into IVC. It was planned to remove the catheter fragment using endomyocardial biopsy forceps, however the biopsy forceps could not be negotiated into IVC and 6F armoured sheath was used within 12F sheath for extra support. Biopsy forceps was introduced into the lumen of proximal tip of the catheter and was brought down into the 12F sheath and subsequently retrieved with femoral sheath. The procedure was uncomplicated and patient got discharged the next day.
Conclusion: Percutaneous retrieval of a dislocated chemoport catheter is a relatively safe, easy and effective technique without the need for special devices, general anesthesia and/or surgical intervention. Novel technique was used in our case involving pigtail catheter with biopsy forceps supported by armoured sheath for successful retrieval.