SUCCESSFUL PREGNANCY IN A SOUTH AFRICAN PATIENT WITH END-STAGE RENAL DISEASE WITH THE USE OF THRICE-WEEKLY NOCTURNAL HEMODIALYSIS

CASE REPORT

Successful pregnancy in a South African patient with end-stage renal disease with the use of thrice-weekly nocturnal haemodialysis

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INTRODUCTION

The first successful pregnancy in a patient on chronic haemodialysis was reported by Confortini et al. in 1971 [1]. Since then, live birth rates of pregnant dialysis patients have improved from around 20% in the 1980’s to 50% in the 2000’s and now exceed 80% [2-4]. The recent meta-analysis by Piccoli et al. [4] highlights the improving pregnancy outcomes in both haemo- and peritoneal dialysis patients. This encouraging trend has been achievable primarily through the intensification and increased duration of haemodialysis sessions and also by improved perinatal care. The introduction of prolonged nocturnal dialysis facilitates the ability to deliver more than 25 hours of haemodialysis weekly. Maternal mortality remains very high, however, 400 times that of the non-dialysis population. It is estimated that pre-eclampsia affects more than 75% of pregnant haemodialysis patients.

In South Africa, it is uncommon for patients on chronic dialysis to have successful pregnancies, although colleagues from around the country have indicated that they have had occasional patients with good outcomes. To the best of our knowledge, none of these cases have been formally published. Here, we report the successful outcome of a pregnancy in a patient on chronic haemodialysis in Cape Town, South Africa. The patient provided written consent for publication.
dialysis catheter in the right internal jugular vein. Blood flow rates were set at 200 ml/min and the dialysate flow rate at 500 ml/min. Enoxaparin 40 mg was administered subcutaneously for anticoagulation prior to each dialysis session as she had previously had an allergic reaction to intravenous heparin. No adverse reactions or bleeding occurred.

The patient’s blood pressure (BP) remained normal during the pregnancy with no need for any antihypertensive medication. BP on dialysis ranged from 90/41–135/72. Weight gain between dialysis sessions varied between 1.6–3.5 kg. The patient had no residual renal function.

Ultrasound scanning was performed by a foetal medicine specialist one month after starting nocturnal dialysis. This indicated that she was 22 weeks pregnant. The patient was monitored every two weeks by her obstetrician. At 26 weeks gestation, a repeat foetal assessment was performed. The foetus was estimated to weigh 800 g and was determined to be potentially viable. Thereafter, whilst the patient was on dialysis, the baby received continuous cardiotocograph monitoring, supervised by an obstetric nursing sister.

Serum biochemistry and haematology parameters were monitored monthly. The patient received regular intravenous iron sucrose infusions and an erythropoiesis-stimulating agent was administered according to her haemoglobin level (Table 1). We were limited to a maximum dose of Mircera® (methoxy polyethylene glycol-epoetin beta) of 200 µg monthly because of cost constraints. Despite regular monitoring and the treatment prescribed she remained anaemic and had a haemoglobin concentration of 8.3 g/dl at the time of delivery.

At 33 weeks gestation she developed preterm labour and was admitted to hospital. At 34 weeks she underwent an elective caesarean section. A baby boy was born, weighing 1.86 kg. The baby’s APGAR scores were 5 and 7. He spent three days in the neonatal high care unit and a further six days in the neonatal nursery. When his weight was 2.0 kg, he was discharged home. The mother was discharged after four days in the neonatal nursery. When his weight was 2.0 kg, he was discharged home. The mother was discharged after four days in the neonatal nursery.

Table 1. Summary of anaemia management during pregnancy.

<table>
<thead>
<tr>
<th>Weeks of pregnancy</th>
<th>Dry weight (kg)</th>
<th>Haemoglobin (g/dl)</th>
<th>Iron sucrose dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–22</td>
<td>56.0</td>
<td>8.2</td>
<td>50 mg weekly</td>
</tr>
<tr>
<td>22–25</td>
<td>57.5</td>
<td>6.8</td>
<td>100 mg weekly</td>
</tr>
<tr>
<td>26–29</td>
<td>59.0</td>
<td>7.2</td>
<td>100 mg weekly</td>
</tr>
<tr>
<td>30–33</td>
<td>63.0</td>
<td>8.3</td>
<td>100 mg weekly</td>
</tr>
</tbody>
</table>

Our multi-disciplinary team played an important part in the positive outcome. Assessing dry weight and preventing polyhydramnios is essential and this required regular review by the attending nephrologist. Our patient was reviewed regularly by her obstetrician and a foetal medicine specialist. Foetal monitoring while she was on dialysis was supervised by a trained obstetric nurse and should be recommended, although it does add to the overall costs.

In conclusion, we have achieved a successful pregnancy outcome in a patient on chronic dialysis and highlighted our ability to maintain a pregnancy to viability with the support of a multidisciplinary team and using thrice-weekly, prolonged, nocturnal dialysis. This report also provides South African women of child-bearing age on dialysis with the hope that they may be able to contemplate a successful pregnancy.

Conflict of interest
None to declare.

REFERENCES