Safety of outpatient initiation of intravenous epoprostenol therapy in patients with pulmonary arterial hypertension

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Background: Initiation of intravenous epoprostenol treatment of pulmonary arterial hypertension (PAH) has generally been done in an inpatient setting. We report our experience of outpatient initiation of epoprostenol.

Methods: Retrospective single-center study of all consecutive patients with PAH initiated on epoprostenol at a tertiary referral pulmonary hypertension center from 1992-2005.

Results: 242 patients were begun on treatment with epoprostenol during the study period (mean age 51 ± 14 years; 74% females). The majority of patients (96%) were World Health Organization class III or IV. Table 1 shows the baseline invasive hemodynamic profile prior to starting drug therapy. Epoprostenol was started in 150 (62%) patients in the outpatient setting. Complications from central venous catheter insertion were rare: 1 patient had a postoperative hematoma and 2 patients developed pneumothorax. Follow up was complete in 218 (90%) patients with a mean follow-up of 4.6 ± 7.9 years (range 14 days-9.9 years). Patients experienced the following catheter-related complications (first adverse event) during follow up: 56 central venous catheter site infections, 26 blood stream infections, 22 catheter dislodgements, 9 catheter fractures, 6 catheter obstructions, and 1 embolic event. Equipment complications were rare (1 pump malfunction). Long-term additional subsequent events included: 29 site infections, 22 blood stream infections, 14 catheter dislodgements, 7 catheter fractures, 4 embolic events, 2 catheter obstructions, and 1 pump malfunction.

Table 1. Hemodynamics on right heart catheterization prior to epoprostenol initiation.

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<thead>
<tr>
<th>RAP (mmHg)</th>
<th>mPAP (mmHg)</th>
<th>PCWP (mmHg)</th>
<th>CI (L/min/m²)</th>
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<tr>
<td>13 ± 8</td>
<td>56 ± 13</td>
<td>13 ± 7</td>
<td>2.44 ± 0.79</td>
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RAP-right atrial pressure; mPAP-mean pulmonary artery pressure; PCWP-pulmonary capillary wedge pressure; CI-cardiac index

Conclusion: The majority of patients had intravenous epoprostenol started safely in the outpatient setting, but subsequently experienced frequent complications typical of this mode of treatment. Central venous catheter- or drug-related complications at the time of drug initiation were rare. Although pump malfunction rarely occurred, catheter-related complications were common with almost half of all patients experiencing an adverse event. Outpatient initiation of epoprostenol appears to be safe for many patients with PAH.

(Clinical Science)