

Sildenafil Treatment in the Postoperative Stage I and II in Univentricular Circulation

*Rodríguez A. , Zunzunegui J.L., Medrano C., Panadero E., Fernandez T., Rodríguez M.J., Fernandez C. (1), Vázquez M.C., Centeno M., Álvarez T., Ballesteros F., Maroto E.
Hospital Universitario Gregorio Marañón. Madrid. Spain.*

Background: Sildenafil in the management of patients with univentricular circulation is less well defined and as yet has only been reported sporadically.

Objectives: Present our experience with sildenafil treatment in patients with Univentricular circulation, started in the immediate postNorwood or Glenn Surgery.

Methods: We retrospectively studied 16 patients (mean age 5.03 months; 8 females; mean weight 4.78kg), treated with oral sildenafil between January 2008 and December 2010 (Postop Stage I 4/16, Postop Stage II 12/16). Dosage (mg/kg/day), duration and side effects were recorded. Basal data in the immediate postoperative period and at 6 months after Glenn, or on stopping treatment was analysed if they achieved: 1)Respiratory improvement (mechanical ventilation withdrawal, supplementary oxygen, nitric oxid); 2)Clinical situation (improvement or maintenance of oxygen saturation); 3) Decrease in debit drains. We analyzed echocardiographic and hemodynamic parameters response in those who underwent catheterization. Pulmonary artery stenosis or other anatomic defects which could compromise pulmonary flow and posterior interventions to achieve hemodynamic or clinical status after treatment were also recorded.

Results: Mean initial dosage was 1.96 mg/kg/d (Range 0.5-4) and mean duration of treatment was 12.4months. Escalating to the maximum dosage occurring within 48 hours in 13/16 (81,3%), mean maximum dosage 2.53. Side effects were observed in 2 patients, hypotension (100%), not requiring withdrawal in any case. The average number of days in which treatment was initiated after surgery was 6.17 days. At the time of initiation of treatment, 9/16(56.2%) patients were on mechanical ventilation, 8/16 (50%) had nitric oxid, 4/16 had moderate to severe ventricular dysfunction. An improvement was observed on commencing in 10/16 patients, especially in respiratory evolution (62.5%). Patients who underwent intervention to optimize pulmonary flow post-treatment 11/16 (5/16 pulmonary artery stenosis, 4/16 collateral circulation) had a positive response in 9/11(80%). Patients with worse ventricular function had a worse response (P=0,046). In patients who underwent catheterization pre and post treatment showed a tendency in decrease in mean pulmonary pressures (Median Pre-treatment 14 - Median Post-treatment 13).

Conclusion: Sildenafil can be used with favourable results in the post-operative setting of children who undergo Norwood and Glenn palliation.