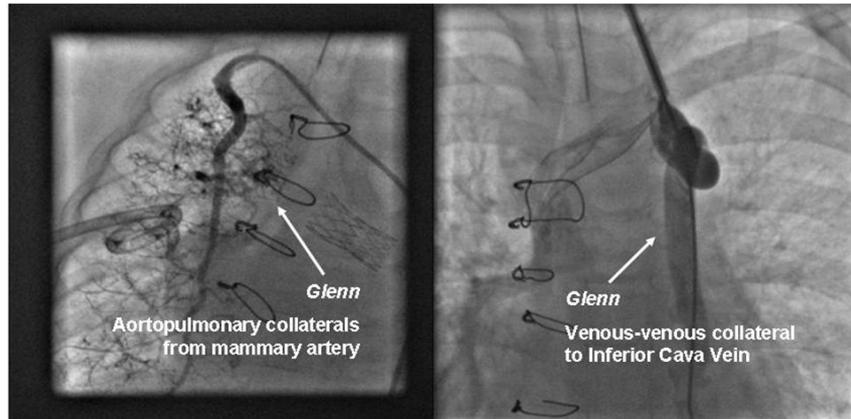


Sildenafil as preparation for the Fontan Procedure

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Introduction;

Patients with Glenn procedure must have optimum pulmonary pressures and pulmonary vascular resistance to face Fontan physiology . Sildenafil has been used in the treatment of primary and newborn pulmonary hypertension, but its role in the single ventricle is not fully



understood. We describe our experience with this drug in treatment for optimization of hemodynamic values in patients before bicavopulmonary anastomosis.

Methods;

23 patients, mean weight of 17,074 g, and with mean age of 5.4 years. All of them with anatomical substrate of single ventricle with aortic hypoplasia and Norwood and Glenn procedures performed. First catheterization was done for anatomic and hemodynamic study. Pulmonary vascular resistance index (PVRI), mean pulmonary pressure (PAP), wedge pressure (WP), and right ventricle end diastolic pressure (RVEDP) were measured. In 15 patients aortopulmonary and veno-venous collaterals were embolized with coils and vascular plug devices (figure).

The indication for Sildenafil administration was the existence of mean PAP > 12 mmHg, pulmonary vascular resistance index > 1.5 units Wood/m², and/or the existence of veno-venous collaterals that could work like a discharge circuit of the upper venous territory (fig.). The treatment was maintained a minimum of 6 months (median 11.4) at a dose of 1-4 mgrs. / kilo / day (mean, 1.87 mgms / kilo / day) until Fontan procedure.

Results;

Catheterization prior to surgery measuring the same hemodynamic parameters was performed, with the following comparative results:

	1^o Catheterization	2nd Catheterization	p
PVRI (U.Wood/m ²)	1.06	1.03	0.07
Qp/Qs	0.59	0.91	< 0.02 *
WP (mmHg)	10.4	8.7	0.09
RVEDP (mmHg)	10.9	10.2	0.2
PAP mmHg	12.7	11	0.08

After treatment with Sildenafil, an improvement in all hemodynamic parameters was observed, although statistical significance was only obtained in Qp/Qs increase (p <0.02).

Fontan was completed in 6 of these patients without mortality. Empirically the treatment was maintained during the next 6 months after surgery.

Conclusions;

Pretreatment with sildenafil before Fontan surgery, can improve hemodynamic parameters of pulmonary circulation, improving mortality and morbidity in the postoperative period, specially in risk patients.