

## Experience with LENUS pro® pump implantation in two pediatric patients

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### Introduction

Prostanoid treatment in patients with severe pulmonary arterial hypertension has been proven safe and effective. Subcutaneous administration of treprostinil associates side effects which limit their use and acceptance. A fully implantable pump for continuous application of intravenous treprostinil has been approved in Germany. We describe our experience with the implantation of this pump in two pediatric patients with severe idiopathic pulmonary hypertension.

### DESCRIPTION OF CASES

The LENUS pro® pump was implanted in two fifteen year-old patients with severe idiopathic pulmonary arterial hypertension. Both treated previously with tadalafil, ambrisentan and subcutaneous treprostinil. In both patients the indication for Lenus pro® pump implantation were local side effects such as pain and inflammation that were not well tolerated and decreased severely the quality of life of our patients. The pump was surgically implanted under general anesthesia without complications.

In the postoperative period one patient had a pneumothorax and was hemodynamically instable requiring vasoactive drugs. Treprostinil was administered at 40 ng/Kg/min through the pump plus an additional subcutaneous treatment that was gradually increased up to a total dose of 85 ng/Kg/min, due to cardiac deterioration. This patient had been previously refused for lung transplant. The patient presented repeated pulmonary hypertension crisis deceasing at day 9 after the pump implantation. The second patient was discharged 4 days after pump implantation with treprostinil at 60 ng/kg/min and no subcutaneous infusion. The doses was gradually increased up to 92 ng/kg/min, well tolerated and with no complications. This patient has been followed for 18 months in which he refers an improvement of his quality of life.

### COMMENTS

Implantable pumps for parenteral prostanoid administration in pediatric patients are an alternative to external pumps, especially when familiar, psychological or psychomotor issues hinder the use of external pumps. However, the risk associated of general anaesthesia should be considered previously.