

## PRESS RELEASE

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# **Quadriplegia patients, with assisted breathing, benefited from the implant of a diaphragmatic pacemaker that can allow them to withdraw mechanical ventilation**

- **This intervention model, unique in Spain, is carried out jointly between Institut Guttmann Medullary Injury Unit and the teams of Thoracic Surgery, Paediatric Surgery and General Surgery of Germans Trias i Pujol Hospital (HGTiP).**
- **Pacemakers allow progressive removal of mechanical ventilation in patients affected by severe cervical spinal cord injury, providing significant improvements in their quality of life such as increase in the survival and reduction of infections.**
- **These injuries have a special impact during summer months when traffic accidents and risk of diving accidents increase.**

**Badalona, July 07, 2017.-** The Institut Guttmann in collaboration with Germans Trias i Pujol Hospital surgeons team, has operated on two patients for the placement of a diaphragmatic implant. One of the cases was a patient of 9 years old, who had already been implanted some time ago and needed a revision of the cables. The other one was a patient of 18 years old, with quadriplegia, that immediately after the surgery, in the same operating room, was able to initiate the disconnection of the respirator successfully. However, at the moment this patient will have to undergo a respiratory rehabilitation program.

The intervention consists of placing four electrodes, two in each hemidiafragma, later connected to an external controller with a laparoscopy, which is a minimally invasive approach way and allows rapid recovery after surgery.

Patients with a complete high level medullary lesion (above C4) usually suffer from respiratory insufficiencies due to the paralysis of the muscles that intervene in respiration, which causes that they need mechanical ventilation and permanent positive pressure to survive . Nowadays it is possible to facilitate ventilation by means of the electrical stimulation of the diaphragm. This procedure consists of a device that, surgically implanted in the diaphragm, causes muscle contraction and offers patients with high cervical lesions and in some neuromuscular diseases, dependent on ventilatory support, possibility of breathing without mechanical support (after an appropriate training); which represents a

significant improvement in their quality of life, reduction of respiratory infections and, ultimately, increment in their survival.

Institut Guttmann-Germans Trias i Pujol Hospital alliance allows the Institut Guttmann to be the only hospital in Spain that makes this type of diaphragmatic pacemaker implants with satisfactory results, both in adults and in very early age children. For this intervention a clinical-surgical team has been organised, which members are, on the one hand, Dr. Joan Vidal and Dr. Francesc Xavier Curià, doctors from Institut Guttmann and coordinators of the program and, on the other hand, Dr. Pedro López de Castro, Chief of the Thoracic Surgery Service, Dr. Carlos Martínez, thoracic surgeon, Dra. Marta de Diego, Head of the Paediatric Surgery Service and Dr. Jordi Tarascó, deputy of the General Surgery Department, all of them from HGTiP.

### **Improvement of quality of life**

Incorporation of this new benefit into portfolio of public services of Catalan health, not only has a special sensitivity to improve the quality of life of patients with severe spinal cord injury, but it also opens the door to these patients of high complexity, that currently live connected during the whole day to mechanical ventilation, can, from now on, eliminate partially or definitively this assisted breathing.

In the same way, close collaboration between two hospitals such as the Germans Trias Hospital and Institut Guttmann in such innovative technique, will undoubtedly help to improve the quality of life of these patients, who have suffered suddenly one of the most severe disabilities that a person can acquire after traumatism or a spinal cord disease. This collaboration shows the potential of the relationship "Institut Guttmann-Germans Trias i Pujol", placing it as one of the European Units of reference in this specialty.

Further information:

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