
European Research Project CLINICIP Optimizes Tight Glycaemic Control

The problem of increased blood glucose levels does not only affect patients with a diabetes history. Hyperglycaemia and insulin resistance are common in critically ill patients. "Recent medical studies have shown that strict glycaemic control and the implementation of an intensive glucose management protocol have contributed to reduce mortality and morbidity and shortened the length of patient stays in the ICU," states Dr. Martin Ellmerer, Scientific Coordinator of the CLINICIP project, Medical University of Graz. To date, however, the control process has had to be carried out manually: A very time-consuming method, and one which puts great responsibility on the nursing staff, who have to make intuitive decisions about the insulin dosage and thus face the risk of hypoglycaemia. "An adaptive control algorithm integrated into a system solution as it is being developed by the CLINICIP project team will reduce the workload and increase the safety and efficiency of insulin therapy. There is a great need for this solution in hospitals worldwide," says Dr. Ellmerer.

International and interdisciplinary teamwork

13 partners from seven European countries have been working together on this project, mainly with scientific or medical background such as the University of Cambridge, Katholieke Universiteit Leuven, Charles University Prague, Medical University of Graz or the Royal Brompton Hospital London as well as industrial partners such as B. Braun, who will use the project findings in their product design.

The decision support system will be able to record therapy data, display trends and suggest insulin doses. It will also offer intelligent alarm monitoring. The idea is to optimize the insulin therapy through an integrated control algorithm which automatically calculates the optimum insulin rate and suggests the time for the next glucose measurement. The system issues an automatic warning as soon as this measurement procedure must be carried out manually. Infusion data from enteral and parenteral nutrition pumps which are influencing the insulin rate calculated by the control algorithm will also be taken into account automatically.

"We are currently in the feasibility study phase with a prototype, and we are optimistic that we will be able to provide the system in the foreseeable future, as we can count on the technology of our intelligent B. Braun Space infusion system. This platform is the essential basis for a challenging therapy like tight glycaemic control in the daily clinical routine," explains Dr. Doris R

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