IMPLANTABLE REAL-TIME CONTINUOUS GLUCOSE SENSOR IN DIABETIC KIDNEY TRANSPLANT RECIPIENT IN INSULIN PUMP THERAPY : FIRST EXPERIENCE

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Background and Aims

Implantable fluorescence-based real-time continuous glucose monitoring (CGM) system (Eversense-Senseonics®) has not yet been tested in diabetic kidney transplant (KT) recipients. System safety as incidence of device-related or procedure-related adverse events over a 80-days period was investigated in a post-KT diabetic patient.

Methods

A 64-years old male patient with post-KT insulin pump treated diabetes (immunosuppression: cyclosporine and low-dose prednisone) with high glycemic variability, low adherence to transcutaneous CGM-system use due to weekly changes and low tolerance to dermic patches (fall-off, disconnection, reddening) underwent Eversense implant. Amoxicillin (2g/die) administered as prophylactic antibiotic therapy. Patient performed calibration twice daily. SF36 used as a quality of life indicator. CGM and data recording is still ongoing and the sensor has not yet been removed.

Results

Implant procedure was uneventful. A small hematoma, most likely due to the concomitant ASA treatment, was observed in the 1st post-insertion day (**Fig.1**). Delayed wound healing, wound infection or inflammation, post-implant pain or skin irritations (**Fig.2-3**), as well as foreign body reaction or device malfunctioning were not noted. There was no interaction with the remnant patient therapy. Therefore sensor photosensibility was evidenced in the first post-insertion week and a signal burst through smart transmitter and alarm-radio was discovered.

Figure 1. Wound feature post-implant day 1. A mild haematoma (thin arrows) surround the wound (thick arrow).

Figure 2. Wound healing on post-implant day 10 is almost complete (arrow). The hematoma is no more visible. **Figure 3.** Three months after implant, the wound is barely visible (arrow)

Conclusions

Eversense, in our report, is a well-tolerated and appreciated CGM device allowing a better glucose control without interactions with cyclosporine and systemic prednisone. A large cohort study in the diabetic KT population should be performed to evaluate the possibilities of pharmacological interactions and/or the insertion/removal procedure or other device related disadvantages.

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