

MOBIL DIALYSIS: a new way of specific caring



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Introduction

A main European Oncological Centre (Oncopole) has been built close to Toulouse's Rangueil Hospital, which treats acute and chronic kidney failure.

A mobile team of DNTO nurses dialyze patients who need to be isolated in a lead chamber for radioactive treatment (iodine 131)
 exemple : thyroid cancer , hyperthyroidism

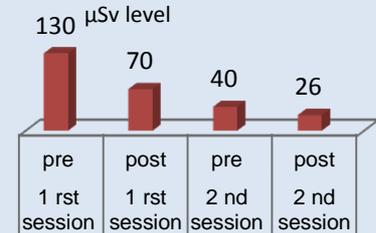
Disposable set



Disposable cost: 96€

Patients benefits

Decreasing of radio-activity



µSv: (microsievert) is used to measure the health effects of low levels of ionizing radiation on the human body

Adaptation

For non-dialysis patients, elimination of radiotherapy products are from:

- 85% in urine
- 15% in faeces, respiration, perspiration

For dialysed, irradiated and isolated patients in lead-lined rooms (5 days)

- two hemodialysis sessions of 2 hours are needed

Hemodialysis session



Evacuation

A major benefit of this technique is that disposal of contaminated waste can be carried out within a specific circuit where the level of radioactivity can be measured. The decay rate is 80 days, and then the material is normally removed.

The ultra-filtrated liquid is then placed in specific toilets that have vacuum evacuation, similar to toilets used on airplanes, thus avoiding any contamination by the radioactive waste.

Innovation: why a mobile cycler?

Its small size, standard electrical connections, and no need for water, processing when using premixed bags of dialysate make this machine uniquely portable for transportation, Assembly of the different pieces can be performed away from the patient and so lessens the risk of staff being exposed to irradiation, Each treatment takes about 2.5 to 3 hours, including setting-up and dismantling.

Progress of a session

Setting-up, dismantling and monitoring are as for a normal dialysis session

Every nurse involved must wear a dosimeter that records levels of radioactivity.

Nurses gesture with the irradiated patient through a sealed leaded screen

The controlled radiation dose given during a session is equivalent to that received by a person in the normal environment for 10 days

(in France 2.3 µSv/ d)

Conclusion

The mobile cycler for extra-renal purification is suited to specific situations or itinerant kidney patients.

This innovate technique for extra renal epuration has been adapted to problematic sessions at different geographic sites, and under unusual conditions.

The benefit to the patients is optimal elimination of biological and radioactive waste.

Mobil Dialysis Cycler



Treatment

During treatment, the cartridge tubing is attached to the blood access. Blood passes through the dialyzer to "clean" the blood. Used dialysate, waste, and excess fluids are removed from the blood, pass through the cartridge, and then through a waste line into a standard drain.

Therapy is complete when the prescribed dialysate volume has been delivered. Used daily supplies are thrown away, and the cyclor is simply wiped down after use.

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- Para-medical Hemodialysis team
- Para-medical Oncological Center team