

# USE OF A "NO WASH" DEVICE FOR POSTOPERATIVE BLOOD SALVAGE IN PROSTHETIC ORTHOPEDIC SURGERY

**AUTHORS :** Tagliaferri C.; Agosti S.; Benedetti A.; Bonati C.; Mazzoni M.; Pellegrini M.; Pieri AM.; Vaccari B.; Operative Unit at Orthopedics and Traumatology ; Castelsangiovanni Hospital, NHS Local Health Authority of Piacenza Leddi G.; Operative Unit at Orthopaedics and Traumatology ; Castelsangiovanni Hospital, NHS Local Health Authority of Piacenza

## OBJECTIVES OF THE STUDY

To select a "no wash" device for postoperative blood salvage in major prosthetic surgery, in order to become a routine procedure.

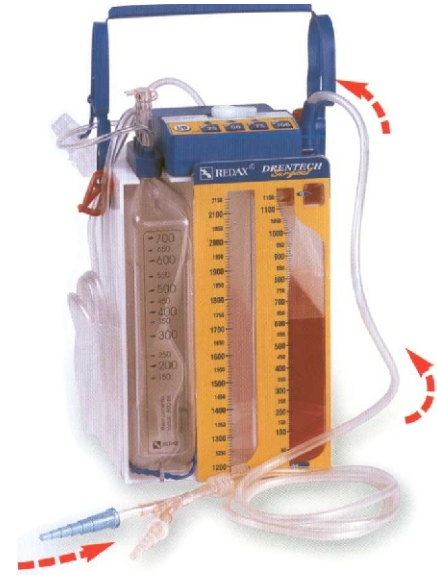
To test whether the methodology and the device for such purpose are safe, user-friendly and

## MATERIALS AND METHODS

Among the many "no wash" devices in commerce, we considered the "DRENTECH SURGICAL" as the most suitable system manufactured by REDAX since :

- \* Once connected to the drainage, this system is completely closed and does not allow any manipulation from outside.
- \* The system can vary the suction strength in a very simple way (from -25 to -100 mmHg)
- \* It is equipped with a double filter: one of 120 microns on the collection chamber inlet, one with 40 microns built-in inside the reinfusion bag.
- \* It is equipped with a system (valve) to separate the buffy coat, during the blood transfer from the collection chamber to the reinfusion bag. The elimination of the buffy coat together with the presence of the built-in 40 microns filter has been considered particularly important since it allows to eliminate degenerated blood platelets, cellular debris and, above all, lipids coming from the medullary cavity of the bone, lipids contained and responsible for fat embolism and/or coagulopathy.

The suction starts at least ten minutes after removing the pneumatic tourniquets, when used, and any time after washing the field of operation only with saline solution.



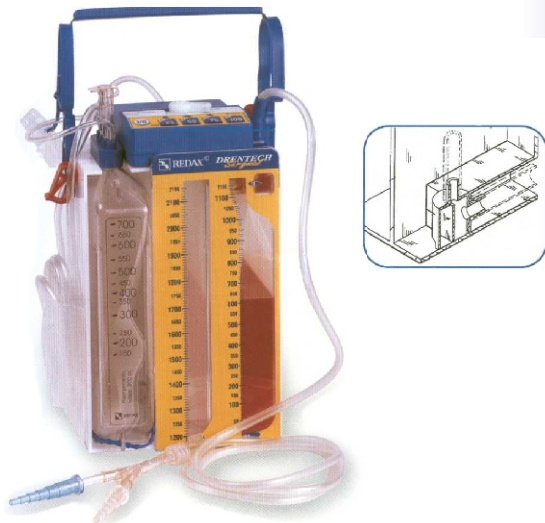
## OUTCOMES

From 15/01/02 to 15/06/02 the methodology has been implemented for 39 patients who had undergone prosthetic hip (PTA) and knee (PTG) operations. For every patient, an analysis (content of haemochrome) of the blood collected before the reinfusion that, in all events, have to take place within six hours from the beginning of the blood recovery. Special attention and monitoring have been paid during the reinfusion phase and during the following hours in order to observe possible adverse reactions such as shivering, fever, etc., that have never appeared. The following days, the possible presence of coagulation disorders has been checked from the clinical and laboratory point of view but they have never appeared.

**The main statistical data can be summarized as follows :**

**PTG: 32 - PTA: 7 - males: 9 - females: 30 average age: 74,4 average of blood recovered for each patient: 520 ml. - Average of reinfused blood for each patient.: 475 ml. 250 ml. - 1.400 ml. - tot. Reinfused blood: 19.525 ml. -**

**Main characteristics of reinfused blood (sample taken from the bag): Hb 10,7 gr/dL; Ht 31,8 %; Plt. 98000 average of bags pre-stored for each patient.: 1.85 - Tot. Number of units of homologous blood used, in this series of patients, during the first ten days : 9 U.**



## DISCUSSION AND CONCLUSION

In our opinion, the postoperative blood salvage through the "no wash" Drentech Surgical Redax system is possible, safe, easy and effective; it requires attention and standardization of the several steps but it does not need a nonstop monitoring and skilled personnel. It definitely helps to reduce homologous blood demands and, thus, to minimize the risk of contracting a transmissible disease. In combination with other techniques, it allows to achieve self-sufficiency with regard to blood transfusions in all major prosthetics surgery operations.

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