Postoperative blood salvage: The new Dry Wash system versus a no wash system after total knee arthroplasty.

E. Barbara², G. Voto², M. Chiaranda¹, N. Di Spigno², A. Grosso², G. Di Palma¹, M. Corbisiero¹
1 Scuola di Specializzazione in Anestesia, Rianimazione e Terapia Intensiva - Università degli Studi dell’Insubria
2 I.C. Humanitas Mater Domini - Castellanza (VA)

INTRODUCTION

The reinfusion of unwashed whole blood after total knee arthroplasty and hip arthroplasty is cheap. Dry Wash is a new system that , through an electronic sensor located between the reservoir and the blood bag, limits reinfusion into blood collection bag, deemed harmful substances.
A IR sensor stop the passage from the reservoir to the bag of reinfusion when the Hematocrit value is under 23% .

OBJECTIVES

We tested this new system in terms of inflammatory response and utility like blood salvage system.

METHODS

We enrolled 60 patients: 30 in the group “no wash” and 30 in the group “dry wash”.

We evaluated the detection of side effects (nausea, fever, shivering) and the changing of white blood cells (WBC) and the C-Reactive Protein (CRP)in 30 minutes before reinfusion, 30 minutes after the reinfusion and 24 hours from the reinfusion.

RESULTS

Both systems have proven to be safe, symptoms in “no wash group” were more than “dry wash group” but were fleeting and not deserving of therapy. In “no-wash group” the presence of minor symptoms (nausea, fever, shivering) is 10% and in the “dry wash group” were not significant. Inflammatory indexes: WBC and CRP were significantly higher in “no wash group” (Graph 1, 2 and 3). (P-VALUE <0.001). The hemoglobin values were similar between the two groups to 24 hours. The hemoglobin in two groups of cell salvage was higher than literature data. (P-VALUE <0.05) (Graph 4)

WBC in two groups before surgery, before reinfusion and after reinfusion (Graph 1)

WBC in two groups before surgery, before reinfusion and after reinfusion normalized to before surgery value (Graph 2)

CRP in the two groups (Graph 3)

Hemoglobin values (Graph 4)

CONCLUSIONS

DRY WASH is a new no wash device to reinfuse the whole blood after total knee and hip arthroplasty.

It is safer in terms of inflammatory response than NO WASH SYSTEM.

Dry wash is a useful and cheap system for blood saving for a better patient outcome.

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ACKNOWLEDGEMENTS

Thanks to the University Professor
Maurizio Chiaranda

CONTACT INFORMATION

Enrico Barbara, MD
I.C. Humanitas Mater Domini
Via Gerenzano , 2
21053 Castellanza (Varese) Italy
E-mail: enrico.barbara@materdomini.it