

A NOVEL SET TO POOL, FILTER AND SPLIT UP TO 6 UNITS OR 1500ML OF PLASMA PRIOR TO INTERCEPT TREATMENT

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Introduction:

INTERCEPT pathogen inactivation (PI) technology is used for source and recovered plasma. To treat recovered plasma, approx. 2.5 units should be pooled to use full capacity of the INTERCEPT processing set (650mL). Hence, 5 units are pooled and separated into 2 splits of 650mL each with a commercially available set. Since the set has no filter, filtered plasma must be used to meet Swiss specifications, which leads to tradeoffs. For example, if whole blood filtration is used, buffy-coats lack platelets (plts). If component filtration is applied, often expensive blood collection sets have to be used. The latter approach is particularly uneconomic when most plasma is not used for transfusion but for fractionation not requiring filtered plasma. To solve this issue, we developed a set with filter.

Methods:

We previously showed that whole blood filter RZ-2000 can remove white blood cells (WBC) from plasma without getting clogged (Goslings et al., Vox Sang 2012;103; suppl.1). Therefore, we designed a set based on this filter (Fig.1). Blood was collected with set NGR6428 (Fenwal) and separated into erythrocytes, buffy-coat and unfiltered plasma. Pools of 6 or 7 of these plasma units were processed with the set (26 pools, 8 spiked with WBC).

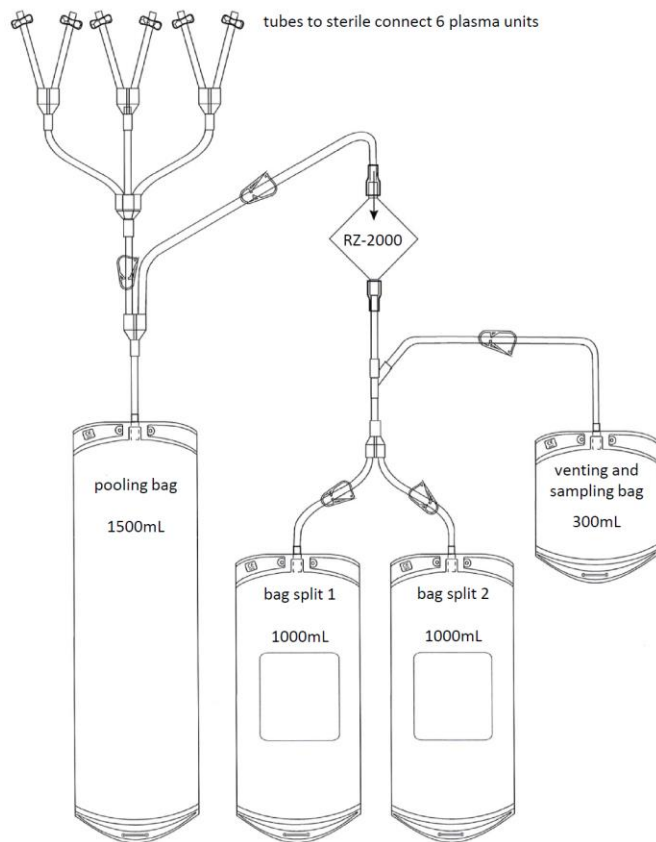


Figure 1: Plasma pooling set with integrated filter

Results:

Pools contained 1500-1899mL plasma with WBC conc. up to $0.5970 \times 10^3/\mu\text{L}$ and plts up to $33.6 \times 10^9/\text{L}$. After filtration, WBC were below detection limit of FACS and plts $\leq 4.1 \times 10^9/\text{L}$ while FVIII and fibrinogen conc. did not change significantly ($p > 0.05$, $n = 18$). Av. total volume loss was 40mL ($n = 22$) and filtration times were < 9 min.

Conclusion:

Our set efficiently filters up to 6 units or 1500 mL of plasma for PI without affecting FVIII and fibrinogen.