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OUTCOME AMONG RECIPIENTS OF ABO NON-IDENTICAL BUT ABO COMPATIBLE PLASMA: A SWEDISH-DANISH REGISTER-BASED COHORT STUDY

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Background: Plasma without anti-A and anti-B antibodies against recipient A and/or B antigens is considered equally safe as ABO identical plasma for transfusion, and consequently plasma from AB blood donors is used as universal plasma. In fact, for logistic reason, many hospitals choose AB plasma to begin transfusion treatment regardless of recipient's ABO type.

Aims: To compare mortality of recipients of ABO identical and ABO non-identical but compatible plasma, in the period up to 30 days after the transfusion.

Methods: The SCANDAT data base is a Swedish-Danish transfusion register which is linked to various population and health registers by the unique 10-digit national registration number used for all residents in Sweden and Denmark. SCANDAT contains information on 1,311,079 recipients who received 11,693,844 transfusions from 1968 in Sweden and 1983 in Denmark to 1st of January 2003. We identified a cohort of recipients who we followed up for 30 days after their first allogenic plasma transfusion. Excluded from the analyses were recipients of unknown blood group, or with a history of intrauterine or autologous transfusion. Also excluded were recipients of any blood component other than ABO identical red blood cells (RBC) within the 30 days prior to the start of follow up. Recipients of ABO non-identical plasma transfusion were considered as exposed and recipients of only ABO identical plasma as unexposed. All data processing was performed using SAS version 8 or higher (SAS Institute, Cary, NC, US).

Results: We identified 139,211 recipients of only ABO identical plasma and 34,286 recipients of ABO non-identical but compatible plasma. After adjustment for age, sex, period, country, region, total number of plasma transfusion, days since first plasma transfusion, and some interactions between these factors, we estimated the mortality in the exposed group to be 7% (95% confidence interval 3%-11%) higher than in the unexposed group. There was also a slight but statistically non-significant dose response effect.

Summary/Conclusions: Preliminary results suggest that mortality is slightly but significantly higher in recipients of ABO non-identical but compatible plasma than in recipients of ABO identical plasma in the 30 day-period after the transfusion. The underlying mechanisms for this difference in mortality, i.e. whether it reflects variation in recipient morbidity or is related to the plasma exposure, remains to be established.