

# Ensuring ABO Compatibility – Key to Safe Transfusion



**Abstract**  
Most serious transfusion error is ABO-incompatible transfusion reported the results of the...  
[Article in Japanese]  
Murakami J.  
Department of Clinical Laboratory Medicine, Nihon University School of Medicine, Tokyo 173-8610.

**Abstract**  
Transfusion errors in New York State: an analysis of 10 years' experience.  
Linden JV, Wagner K, Voytovich AE, Sheehan J.  
Blood and Tissue Resources Program, Wadsworth Center, New York State Department of Health, Albany, New York 12201-0509, USA. jvl01@health.state.ny.us

**Abstract**  
BACKGROUND: While public focus is on the risk of infection, transfusion errors significantly to adverse outcomes are not well defined. We

**Abstract**  
Factors that predict outcome after ABO-incompatible RBC transfusions in...  
Janatpour KA, Kainin ND, Jensen HM, Holland PV.  
Department of Pathology and Laboratory Medicine, University of California Davis Medical Center, Sacramento 95817, USA.

**Abstract**  
In New York State, significant incidents of ABO-incompatible transfusions must be reported. Incident reports received from transfusion recipients other than the intended recipient or recipient's family, 1,784,600 transfusions of red cell components met study criteria (1/19,000). There were 17 deaths (1/600,000) were fatal. Correction factor data results in an estimate of 800 to 900 errors annually. The majority of reported errors occurred in the transfusion service, to failure to identify the patient and/or unit prior to transfusion, while the blood bank was responsible for 17 percent. The risk of ABO-incompatible transfusions is significant, and additional precautions to minimize errors should be considered.

**Comment in**  
ABO errors. [Transfusion 1993]

**Abstract**  
Consecutive national surveys of ABO-incompatible blood transfusion in Japan.  
Yok Sang, 2009 Oct;97(3):240-6. Epub 2009 May 20.  
Ejiri Y, Shibata Y, Miyata S, Inaba S, Asai T, Hoshi Y, Takamatsu J, Takahashi K, Ohtsuka H, Juji T, Sogaawa K.  
Department of Blood Transfusion, Yamaguchi University Hospital, Yamaguchi, Japan. yuji-ygc@umin.ac.jp

**Abstract**  
BACKGROUND AND OBJECTIVES: Morbidity and mortality from ABO-incompatible transfusion as consequences of human error. Even so, insufficient attention has been given to improving transfusion safety within the hospital.  
STUDIES AND METHODS: National surveys of ABO-incompatible transfusion conducted by the Japanese Society of Blood Transfusion, with support from the Ministry of Health, Labour and Welfare. Surveys concluded in 2000 and 2005 analysed ABO-incompatible transfusion incidents in the previous 5 years (January 1995 to December 1999 and January 2000 to December 2004). The first survey targeted 777 hospitals and the second, 1355 hospitals. Data from 777 hospitals and 1355 hospitals were analysed.  
RESULTS: The response rate (578 of 777 hospitals). The second survey targeted 1355 hospitals and the second, 1355 hospitals. Data from 777 hospitals and 1355 hospitals were analysed.  
CONCLUSIONS: The response rate (578 of 777 hospitals). The second survey targeted 1355 hospitals and the second, 1355 hospitals. Data from 777 hospitals and 1355 hospitals were analysed.

**Abstract**  
ABO incompatible transfusions are still a frequent cause of serious adverse transfusion reactions. Bedside check is intended to detect patient errors and prevent ABO mismatch. France is one of the few countries that includes ABO agglutination test for red blood cells in bedside checks. Evaluation of this ABO agglutination test, performed with a special card, shows that, on the field, despite frequent users' mishandling, it can detect up to 93% of ABO incompatibilities. This is not enough to rely on this sole test for bedside checks. But, linking it with another test, currently, checks that the right blood is given to the right patient, rises the sensitivity of the whole bedside procedure up to an estimated 99.65%, for detection of ABO incompatibilities. This linkage has been introduced in French regulation in 2003. Since then, the incidence of ABO incompatible transfusions has decreased dramatically and faster than in any other country, so France has now, probably, the lowest rate of ABO incompatible transfusions. The investigation of the few ABO accidents that still occur, shows that professionals have always bypassed this linkage. On the other hand, introducing bedside recipient and blood products barcode or radio-chip checks in all the 1500 French hospitals, though technically possible, would provide very little enhancement and lead to major difficulties and expenses. Linkage of ABO agglutination test to patient and blood checks within the bedside procedure has proved to be efficient and should be kept.

**[Yes, we should keep ABO agglutination test within bedside transfusion checks].**  
[Article in French]  
Daurat G.  
Drass, Parc-Club-du-Millénaire, Montpellier, France. gerald.daurat@sante.gouv.fr

**Abstract**  
A report of 104 transfusion errors in New York State.  
Linden JV, Paul B, Dressler KP.  
Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany, New York 12201-0509, USA.

## Facts :

- 🔴 Globally ABO-incompatible transfusions are still a frequent cause of serious adverse transfusion reactions.
- 🔴 Most errors result from human actions and thus may be preventable.
- 🔴 In two consecutive surveys of ABO incompatible blood transfusion in Japan, out of 226 reported incidences 118 were because of identification error between patient and blood product.
- 🔴 In a survey of America's Blood Centers they found that out of 42 reported ABO incompatible transfusions 26 occurred at patient's bedside.
- 🔴 Majority of adverse events occur outside the blood bank, which suggests that hospital wide efforts are required to minimize ABO-incompatible transfusions.





Most Hemolytic Transfusion Reactions and resultant deaths are because of inadvertent administration of ABO-incompatible red cells. Such transfusions result from errors in sample or patient identification. In order to prevent life threatening Hemolytic Transfusion Reactions because of ABO-incompatible blood transfusion bedside ABO and Rh grouping of patient and donor's blood unit should be incorporated in pre transfusion testing.

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