

Management guide for emergency use group O red blood cells

OFFICIAL

The intention of this document is to help guide practice in relation to issues that may occur with the use of emergency group O red blood cells (RBC). It may be consulted after the event or used to support education to prevent issues occurring.

It is intended as a guide only; other scenarios may arise. Consult your local transfusion haematologist if required. To be read in conjunction with emergency use group RBC communique.

Issue	Actions		
Female of childbearing potential (≤ 50 years old) received O RhD positive emergency use RBC	<ul style="list-style-type: none"> Determine RhD status of patient 		
	<table border="1"> <tr> <td> RhD positive <ul style="list-style-type: none"> No action required (O RhD positive RBC are ABO and RhD compatible) </td> <td> RhD negative <ul style="list-style-type: none"> Haematology consultation may be appropriate Consider giving RhD Immunoglobulin (Anti-D) Consider follow-up to monitor for RhD alloimmunisation </td> </tr> </table>	RhD positive <ul style="list-style-type: none"> No action required (O RhD positive RBC are ABO and RhD compatible) 	RhD negative <ul style="list-style-type: none"> Haematology consultation may be appropriate Consider giving RhD Immunoglobulin (Anti-D) Consider follow-up to monitor for RhD alloimmunisation
	RhD positive <ul style="list-style-type: none"> No action required (O RhD positive RBC are ABO and RhD compatible) 	RhD negative <ul style="list-style-type: none"> Haematology consultation may be appropriate Consider giving RhD Immunoglobulin (Anti-D) Consider follow-up to monitor for RhD alloimmunisation 	
<ul style="list-style-type: none"> Review appropriateness of transfusion i.e. <ul style="list-style-type: none"> availability of O RhD negative RBC transfusion of ≥ 4 units of emergency use RBC Investigate incident, report to relevant haemovigilance reporting system if appropriate 			
Male ≤ 18 years old received O RhD positive emergency use RBC	<ul style="list-style-type: none"> Determine RhD status of patient 		
	<table border="1"> <tr> <td> RhD positive <ul style="list-style-type: none"> No action required (O RhD positive RBC are ABO and RhD compatible) </td> <td> RhD negative <ul style="list-style-type: none"> No specific action required If RhD alloimmunisation is noted during routine care, this can be reported to STIR </td> </tr> </table>	RhD positive <ul style="list-style-type: none"> No action required (O RhD positive RBC are ABO and RhD compatible) 	RhD negative <ul style="list-style-type: none"> No specific action required If RhD alloimmunisation is noted during routine care, this can be reported to STIR
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Issue	Actions
O RhD negative female > 50 years old or male > 18 received O RhD positive emergency use RBC	<ul style="list-style-type: none"> • If patient is transfusion dependent, a transfusion haematology consultation may be appropriate • If RhD alloimmunisation is noted during routine care, this can be reported to STIR • Otherwise, no specific action required
Patient with anti-D antibodies received O RhD positive emergency use RBC	<ul style="list-style-type: none"> • Monitor for acute or delayed haemolysis • Transfusion haematology consultation may be appropriate • Investigate incident, report to relevant haemovigilance reporting system if appropriate
Patient with an antibody (other than anti-D) received group O emergency use RBC	<ul style="list-style-type: none"> • Assess risk of incompatibility based on antibody specificity and the phenotype of the transfused units e.g., a recipient with anti-c transfused with O RhD negative (c positive) RBC • Monitor for acute or delayed haemolysis, if appropriate • Transfusion haematology consultation may be appropriate • Investigate incident, report to relevant haemovigilance reporting system if appropriate
Patient transfused with emergency use group O RBC prior to collection of group and screen/crossmatch specimen	<ul style="list-style-type: none"> • Take GS/crossmatch specimen as soon as possible • Ensure clinical details on request form state the specimen was taken after transfusion of emergency use group O RhD negative or RhD positive (state which) RBC were transfused <p><i>If the laboratory has difficulty determining the blood group of the patient, group O RBC may need to continue to be given</i></p> <ul style="list-style-type: none"> • Focus on education of staff involved to mitigate risk of future occurrence
Patient with special requirements (e.g. irradiated red cells) transfused emergency use group O RBC	<p>The British Society of Haematology (BSH) guidelines on the use of irradiated blood components (2020) recommend:</p> <ul style="list-style-type: none"> • avoiding using irradiated blood for patients undergoing massive haemorrhage unless otherwise indicated • not delaying transfusion of components in an emergency situation if no irradiated components are available and the patient requires irradiated components. <p>The risk of serious morbidity or mortality resulting from traumatic haemorrhage should be prioritised over any special requirements.</p> <ul style="list-style-type: none"> • Monitor patient condition depending on underlying reason for special red cell requirements • Review appropriateness of transfusion i.e. <ul style="list-style-type: none"> – whether special requirements were identified as required – availability of irradiated RBC – urgency of transfusion • Investigate incident, report to relevant haemovigilance reporting system if appropriate

Issue	Actions
Pregnant female transfused non-CMV negative O RhD negative RBC	<ul style="list-style-type: none"> • No further action required if transfusion deemed appropriate • No action required <p>The risk of serious morbidity or mortality resulting from traumatic haemorrhage should be prioritised over any special requirements.</p> <p>Emergency group O RBC do not need to be CMV seronegative. In Australia, universal leucodepletion of RBC provides a very high level of protection against transfusion transmitted CMV, even if the recipient of emergency Group O RBC is a pregnant woman (NBA 2021)</p>
<p>Regular audit discovers inappropriate use of emergency use group O red blood cells, e.g.</p> <ul style="list-style-type: none"> • valid crossmatch available • more than four units O RhD negative RBC transfused • not clinically indicated • outside local policy 	<ul style="list-style-type: none"> • Incident investigation, report through local incident reporting system and blood management committee (or equivalent) • Education of staff involved • Undertake policy review and update if appropriate

The risk of serious morbidity or mortality resulting from traumatic haemorrhage should be prioritised over potential risk of alloimmunisation.

If the patient's identity is known, this should always be communicated to the laboratory so they can access any historic transfusion information prior to issue of emergency use group O RBC. There may be a valid group and screen or crossmatch available for use.

References

National Blood Authority Australia. 2021. Group O red blood cells emergency blood management. [National Standard for Blood and Blood Products Safety and Quality | National Blood Authority](#) Accessed on 17 May 2022.

British Society for Haematology (BSH) Guidelines on the use of irradiated blood components. Theodora Foukaneli, Paul Kerr, Paula H.B. Bolton-Maggs, Rebecca Cardigan, Alasdair Coles, Andrew Gennery, David Jane, Dinakantha Kumararatne, Ania Manson, Helen V. New, Nicholas Torpey, the BCSH Committee. 18 August 2020. <https://doi.org/10.1111/bjh.17015>

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