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PURPOSE

To appropriately and safely transfuse **Albumex®20** and **Albumex®4**.

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PROCEDURE

1. Requests for Albumin

To make a request for Albumin the doctor must:

Either complete a written request on the Blood Product Request Form (MR/17A) or phone Peter Mac Blood Bank. Phone orders require the following patient information; the patient's identification details, blood group, clinical details, indication & albumin level.

Write the order for Albumin on the Blood Product Prescription Form (MR/61AA)
Document the indication(s) for Albumin in the patient's medical record.

2. Indications:

- Albumex®4 - Plasma Exchange
Hypoproteinaemia/ hypoalbuminaemia (albumin concentrations <25g/L).
- Albumex®20 - Hypoproteinaemia/ hypoalbuminaemia in critically-ill patients.
Burns
Paracentesis of ascites in patients with cirrhosis or when the volume exceeds 6 litres.
Haemodialysis
Commonly used at Peter Mac for patients undergoing ONTAK immunotoxin therapy or other therapy with a high risk of vascular leak syndrome exacerbated by hypoalbuminemia.

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3. General Information

- General:** Albumin is a blood product, a plasma expander and a naturally occurring colloid. It is prepared by combination of the Cohn cold-ethanol fractionation process and chromatographic techniques.
Albumex®4 contains 40g/L of human albumin
Albumex®20 contains 200g/L of human albumin
- Dose:** Albumex®4(4%vw)(isosmotic) - dose is dependent on plasma exchange volume.
Each bottle of albumex® 4 contains 500ml volume.
- Albumex®20 (20%vw) (hyperosmotic) - dose is dependent on patient condition and reason for administration. Standard dose is 1 bottle daily-12 hourly. Each bottle of Albumex®20 contains 100ml volume.
- Premedication:** Not required
- Route:** IV infusion.
- Administration Rate:** Determined by clinical situation.
The administration rate of Albumex®4 is usually 2-4 hours.
The administration rate of Albumex®20 should not exceed 2 mL per minute for use in hypoproteinaemia in the acutely ill patient, as more rapid infusion may precipitate circulatory overload and pulmonary oedema.
- Compatibilities:** Sodium chloride 0.9%, Glucose 5%, Glucose 10%, Sodium Chloride/glucose solutions, Hartmann's (Water for injection may substantially reduce tonicity).
- Storage:** Albumin should be stored below 30° C and preferably stored at 2 – 8° C in the Blood Bank or Theatre Blood refrigerator only.
Not to be stored in ward refrigerators. Do not freeze.
- The product contains no antiseptic, therefore, it must be used immediately after the bottle is opened and any unused solution discarded.
- The product normally shows slight opalescence but if it appears to be turbid or contains any sediment, it must not be used and the bottle returned to Blood Bank.
- Contraindications:** Albumex is contraindicated if there is a history of allergy to Albumin or in patients with cardiac failure, severe anemia.
- Albumex®4 should not routinely be used as a resuscitation fluid for hypotension/ hypovolaemia; crystalloids should be used instead.
 - Albumex®20 is not justified in uncomplicated hypoproteinaemic states associated with chronic cirrhosis, malabsorption, protein losing enteropathies, pancreatic insufficiency or undernutrition. In chronic nephrosis, infused albumin solution (20%) is promptly excreted by the kidneys with no relief of the chronic oedema.

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4. Administering Albumin

Equipment Required

NOTE: All blood components, except Granulocytes, are to be administered through an intravenous line incorporating a standard (170-200µm) filter to remove clots and aggregates. Plum A+ Administration sets are filter free lines, therefore blood components need to be administered via an Add-A-Line Secondary Medication Set through channel B.

- Plum A+ Administration set
- Add-A-Line Secondary Medication Set
- Long airway needle with filter
- Non-sterile gloves
- Safety goggles
- Blood Product Prescription Form (MR/61AA)
- Transfusion Report Form (MR/17AB)

Product and Recipient Identification Procedure

Two Division 1 Registered Nurses or Division 1 Nurse and RMO confirm that the following points correspond immediately prior to the transfusion, at the patient's bedside.

If any discrepancies are noted clarification must be sought by contacting the Blood Bank scientist.

1.	Patient's full name and date of birth (DOB)	<ul style="list-style-type: none"> • Verbally with the patient (where possible) • Patient's Identification Band • Transfusion Report Form (MR/17AB) • Blood Product Prescription Form (MR/61AA) • Patient Bradmar Label on Bottle
2.	Patient's Unit Record Number (UR Number)	<ul style="list-style-type: none"> • Patient's Identification band • Transfusion Report Form • Blood Product Prescription Form (MR/61AA) • Patient Bradmar Label on Bottle
3.	Batch Number	<ul style="list-style-type: none"> • Transfusion Report Form • CSL Label on the Product
4.	Expiry of the Product	<ul style="list-style-type: none"> • Transfusion Report Form • CSL Label on the Product
5.	Product Contents	<ul style="list-style-type: none"> • Absence of turbidity or sediment

Both professionals checking the product **must** sign the Transfusion Report Form (MR/17AB) after checking each bottle.

A summary of this checking procedure is tabulated on the Transfusion Report Form.

Administration Procedure

1. Prior to commencing Transfusion, ensure that the patient has received adequate education, has had an opportunity to ask questions about blood product transfusions and has given consent to the transfusion.
2. If the Albumin was stored in the refrigerator it should be allowed to reach room temperature before administration.

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3. Prior to transfusion record baseline vital signs (temperature/pulse/respirations/blood pressure and O₂ saturations).
4. **Complete the product checking procedure** outlined above at the patient's bedside.
5. Remove the plastic cover from the seal and wipe the exposed part of the rubber stopper with an alcohol swab and allow to dry.
6. Prime the Plum A+ Administration set with Normal Saline 0.9%. Connect Add-A-Line Secondary Medication set to channel B and back prime with Normal Saline 0.9%.
7. If an airway needle is required, stand the bottle upright and insert the airway needle vertically in one of the indentations on the stopper. Otherwise, clamp the tubing of the Add-A-Line and insert the perforator vertically through one of the indentations of the stopper. Invert the bottle and attach to IV pole.
8. Unless otherwise indicated by the patient's clinical condition, the transfusion should proceed no faster than 5mL/min for the first 15 minutes. The patient should be closely observed during this period. If no transfusion reaction is observed the rate can be increased according to the Blood Product Prescription Form (MR/61AA).

Note: It is recommended that the initial volume to be infused (VTBI) is set at that which will be transfused in the first 15 minutes. This ensures close monitoring of the patient and also that observations after the first 15 minutes are undertaken.

9. Observations (temperature, pulse rate, respiration rate and blood pressure) must be recorded at the following times:
 - Prior to each transfusion record baseline vital signs
 - **Remain with the patient for the first 5 minutes of the infusion** and observe for adverse effects.
 - Record vital signs after the first 15 minutes of the transfusion
 - Record vital signs at completion of the transfusion.

Continue to closely monitor the patient throughout the duration of the transfusion. More frequent vital signs may be required if the patient becomes unwell, shows signs of reaction or has an unstable condition.

10. Attach batch number sticker from Albumin bottle onto Transfusion Report Form (MR/17AB).
11. If the Albumin batch number is changed during the transfusion of multiple bottles, repeat the observations outlined above.
12. At completion of the Albumin infusion flush Plum A+ administration set (Line A) with 30 ml Normal Saline 0.9%. Discard administration sets and Albumin bottle into appropriate waste containers.
13. Document the transfusion in the patient's history.
14. Complete transfusion reaction column on Blood Products Orders / Prescription Form (MR61AA).

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5. Adverse Reactions

Anaphylaxis: Albumex is derived from human plasma and therefore, anaphylaxis is a potential adverse reaction. Should hypotension, shortness of breath, shivering/coldness, fever or nausea/vomiting occur, stop the transfusion and ensure the patient is reviewed immediately by a medical staff member.

Circulatory Overload: Albumex@20 is hyperosmotic and circulatory overload can occur, especially if the product is rapidly infused. It is recommended that blood pressure be closely monitored during the administration of Albumin, along with observance of decreased urine output, weight gain, shortness of breath or other indicators of circulatory overload.

Nursing Intervention if Adverse Reaction Suspected

1. Stop infusion/procedure.
2. DO NOT REMOVE INTRAVENOUS ACCESS.
3. Contact HMO.
4. Initiate appropriate anaphylaxis procedures and treatment if appropriate.
5. Complete a Patient Safety Incident Report Form and notify PMCC Blood Bank on Ext (1533).
6. Record the details of the reaction in the patient's medical records.
7. For patients undergoing plasma exchange, document (Australian & New Zealand Apheresis Association) reaction code on procedure record (MR/57A).
8. Return Albumin bottle to Blood Bank in a sealed biohazard specimen bag or eski.

Advice regarding transfusion reactions can be obtained from either the Haematopathology staff (Consultant, Registrar or Scientists) or the Clinical Haematology Staff (Consultant or Registrar).

6. Haemovigilance

In an attempt to promote haemovigilance and best transfusion practice, PMCC Blood Bank scientific and medical staff may discuss the clinical indication or need to transfuse if requests are outside Peter Mac guidelines.

7. References

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