

ALBUMIN

Indication	<ul style="list-style-type: none"> • Plasma or blood volume deficit or oncotic deficit from hypoproteinemia¹ • Volume expansion¹, therapeutic plasma exchange¹, haemolytic disease of the newborn¹, hypovolaemic shock¹, burns², hyperbilirubinemia² 	
INTRAVENOUS	Presentation	<ul style="list-style-type: none"> • 4% solution (2 g in 50 mL) • 20% solution (2 g in 10 mL)
	Dosage	<ul style="list-style-type: none"> • 4% albumin³ <ul style="list-style-type: none"> ○ 10 mL/kg • 20% albumin³ <ul style="list-style-type: none"> ○ 2–5 mL/kg • If there is no loss from plasma, the dose (mL/kg) can be calculated as³ $\frac{5 \times (\text{increase in g/L})}{\% \text{ albumin}}$
	Preparation	<ul style="list-style-type: none"> • If refrigerated, warm to room temperature before use⁴
	Administration	<ul style="list-style-type: none"> • Prime the infusion line and reduce total syringe volume to the prescribed dose • On completion, disconnect syringe and infusion line • Flush access port at same rate as infusion • 4% albumin <ul style="list-style-type: none"> ○ IV infusion via syringe driver pump over 30–60 minutes • 20% albumin <ul style="list-style-type: none"> ○ IV infusion via syringe driver pump of 6–8 hours
Special considerations	<ul style="list-style-type: none"> • Distributed by Australian Red Cross Blood Service^{5,6} • Contraindication <ul style="list-style-type: none"> ○ Severe anaemia or cardiac failure^{5,6} • Ensure prescribed strength is appropriate for indication [refer to Actions] <ul style="list-style-type: none"> ○ Use 20% albumin with caution in compromised babies • Ensure adequate hydration during or after infusion of 20% albumin (may cause hypernatremia)² • Do not filter the infusion 	
Monitoring	<ul style="list-style-type: none"> • For circulatory overload • BP and heart rate during infusion^{1,6} • Urine output² • Electrolytes², serum protein/albumin 	
Compatibility	<ul style="list-style-type: none"> • Fluids <ul style="list-style-type: none"> ○ 5% glucose⁴, 10% glucose⁴, 0.9% sodium chloride⁴ 	
Incompatibility	<ul style="list-style-type: none"> • PN and fat emulsion: co-infusion with albumin not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after • Fluids <ul style="list-style-type: none"> ○ Amino acid solutions⁴, fat emulsions⁴, solutions containing alcohol⁴, water for injection⁴ • Y-site <ul style="list-style-type: none"> ○ Drugs that bind to albumin (e.g. diazepam, phenytoin)⁴, midazolam⁴, piperacillin-tazobactam⁴, vancomycin⁴, verapamil⁴ 	
Interactions	<ul style="list-style-type: none"> • No data 	
Stability	<ul style="list-style-type: none"> • Do not use if turbid or contains sediment (should appear slightly opalescent)⁶ • 4% albumin <ul style="list-style-type: none"> ○ Store below 30 °C (do not freeze). Protect from light⁵ • 20% albumin⁶ <ul style="list-style-type: none"> ○ Store at 2–8 °C 	

Side effects	<ul style="list-style-type: none"> • Circulatory: tachycardia¹, hypotension², overload • Nervous: flushing¹, fever² • Hypersensitivity reactions: rare in neonates. May present as apnoea, hypotension, bradycardia, erythema and rash (maculopapular rash, red purple plaques or urticarial type plaques⁷⁻¹⁰)
Actions	<ul style="list-style-type: none"> • 4% albumin is iso-oncotic with human serum⁶ <ul style="list-style-type: none"> ○ In adequately hydrated patients, expands the circulating blood volume by an amount approximately equivalent to the volume infused⁶ • 20% albumin is hypo-osmotic and hyperoncotic compared with human serum⁶ <ul style="list-style-type: none"> ○ Supplies the oncotic equivalence of approximately four times its volume of human plasma⁶ (therefore caution with duration of administration)
Abbreviations	BP: blood pressure, IV: intravenous, PN: parenteral nutrition
Keywords	Albumin, human albumin, normal serum human albumin, hypoproteinemia, volume expander, oncotic pressure,

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

References

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Document history

ID number	Effective date Review date	Summary of updates
NMedQ20.048-V1-R25	20/07/2020 20/07/2025	Endorsed by Queensland Neonatal Services Advisory Group (QNSAG)

QR code

