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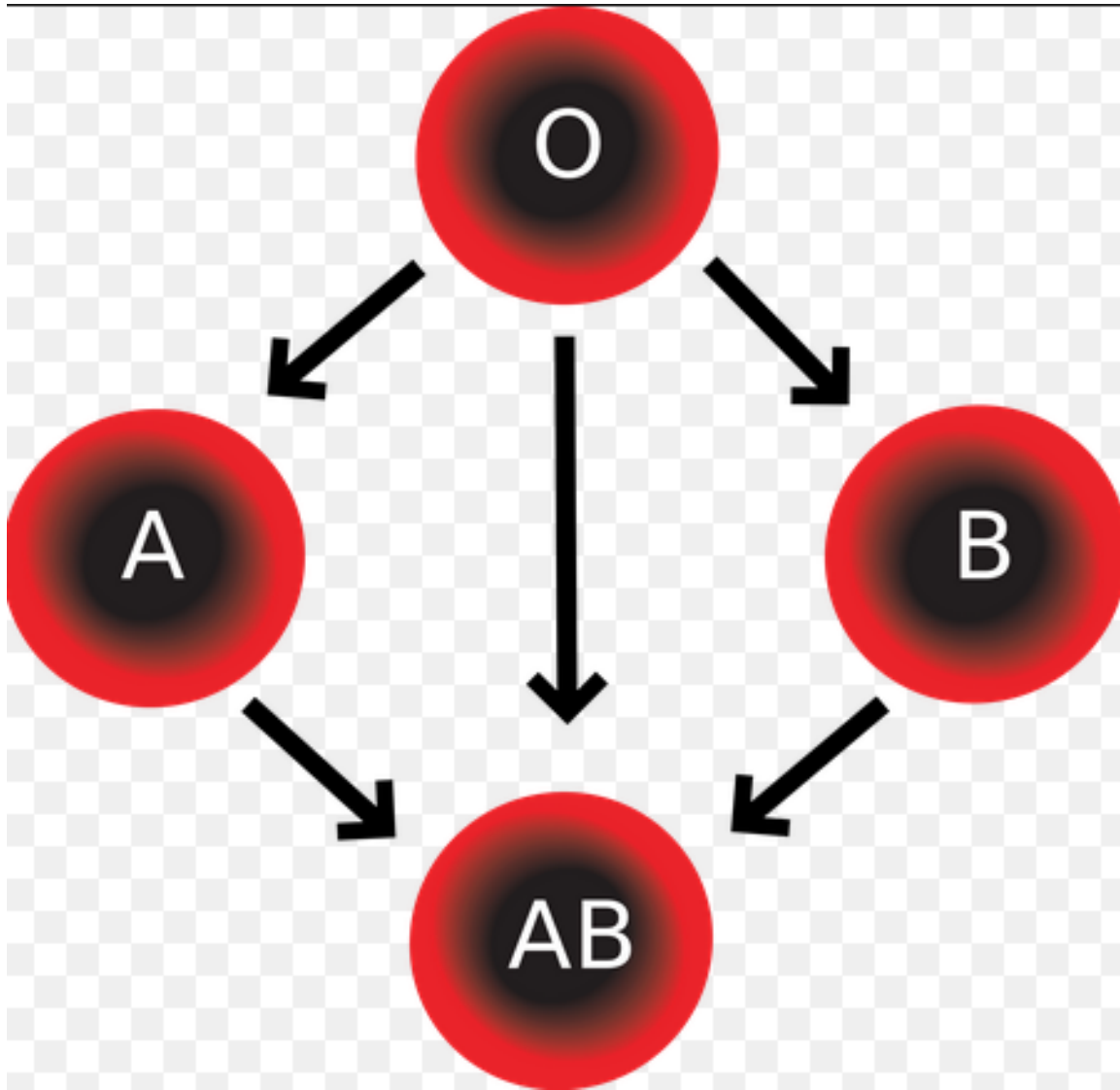
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BLOOD COMPATIBILITY



BLOOD PRODUCT & COMPATIBILITY, ABG'S, CODE DRUGS, ICP, & INSULIN CHEAT SHEETS

BLOOD GAS FORMULAS

NAME	NORMAL VALUE	FORMULA
CaO₂ O ₂ content of arterial blood	15-20 vol%	$(hb \times 1.34 \times SaO_2) + (PaO_2 \times 0.003)$
CvO₂ O ₂ content of mixed venous	12-15 vol%	$(Hb \times 1.34 \times SvO_2) + (PvO_2 \times 0.003)$
C(a-v)O₂ Artery to venous O ₂ content diff.	3.5-5.0 vol%	CaO ₂ – CvO ₂ Tissue oxygenation
Pa-vDO₂ Partial press. artery-to-vein	50 mmHg	PaO ₂ – PvO ₂ Tissue oxygenation
PAO₂	100 mmHg	$(PB - PH_2O) \times FIO_2 - (PaCO_2 / 0.8)$ *PB=Barometric press., PH ₂ O=47*
P(A-a)O₂ (A-a) Alveolar-to-artery gradient	<26 mmHg (RA) <100 mmHg on FIO ₂ of 100%	PAO ₂ – PaO ₂ Gradient shows diffusion deficit/shunt
PaO₂ Artery partial pressure of O ₂	80-100 mmHg	Lab value

BLOOD PRODUCTS

BLOOD PRODUCT	INFO	INDICATION
Packed Red Blood Cells (match ABO/Rh)	No clotting factors, 80% plasma. Leukocyte reduced prevent febrile reaction	Increase O ₂ carrying capacity. If Hbg < 8 mg/dL.
Platelets (match ABO/Rh/HLA)	Platelets only. 1 unit ↑'s count by 5,000.	Prevent bleeding with ↓ platelet or coagulopathy.
Fresh Frozen Plasma (match ABO)	Plasma & clotting factors.	Replace factors after large transfusions or Coumadin OD.
Cryoprecipitate (prefer match ABO)	Clotting factors & fibrinogen.	Bleeding r/t DIC, hemophilia, fibrinogen deficiency.
Factor IX concentrate	Risk hepatitis d/t pooled donors	Treat hemophilia B
Factor VIII conc.	Heat-treated ↓ risk of Hep/HIV	Treat hemophilia A
Whole Blood (match ABO/Rh)	Contains all blood products. Rarely used.	Exsanguinating patient, massive transfusion.

CODE DRUGS

DRUG	INDICATION	DOSE	DETAILS
Adenosine	PVST	6 mg IV rapid flush	Chest pain, BP drop, bradycardia
Amiodorone	VT, VF, AF, SVT, PSVT	300 mg IV, Wide QRS 150	Prolonged QT Hypotension
Atropine	Bradycardia	1 mg IV q3min	Myocardial demand
Calcium Chl.	Hyperkalemia Hypocalcemia	0.-1 g slowly q10 min.	Brady., asystole, or hypotension
Dextrose 50	Hypoglycemia	50ml slow IVP	Fluid overload
Dobutamine	Low CO, CHF	2-20 mcg/k/m	Tachycardia
Dopamine	↓HR, ↓BP	5-10 mcg/k/m	Myocardial demand
Epinephrine	Cardiac arrest	1mg IVP q3m	1:10k = 0.1mg/mL
Flumazenil	↓RR: Benzo's	0.2mg up to 1	Repeat q1 min.
Lidocaine	VT, VF	1mg/kg max 3	Reduce dose CHF
Mag Sulfate	VF, Torsades	1-2mg IVP	↓BP, Caution Renal
Nitroglycerin	Angina, HTN	10-20mcg/m. 0.5mg SL q5 x3	Hypotension, HA
Nor-Epi	Hypotension	2-20 mcg/min	Myocardial demand Arrhythmias
Bicarbonate	↓K, Acidosis	1 mEq/kg IVP	∅ Cardiac arrest

INTRACRANIAL PRESSURES SYMPTOMS

ASSESSMENT	EARLY SYMPTOMS	LATE SYMPTOMS
Level of consciousness	Restlessness/anxiety Speaking less Increased stimulation need Slight loss of orientation	Unarousable
Pupils	Sluggish reaction to light Unequal pupil size Unilateral pupil reaction Pupil Δ on side of lesion	Pupils fixed and dilated
Motor response	Acute onset weakness Motor Δ opposite side lesion One hand pronates when both held with palms up	Extreme weakness
Vital signs	Acute \uparrow BP fluctuations	\uparrow SBP Wide pulse press. Bradycardia Irregular breath

INSULINS

TYPE	ONSET	PEAK	DURATION	FLUID
Regular	0.5-1 hr	2-4	6-8	Clear
NPH	1-2 hr	6-10	12 +	Cloudy
Aspart	< 10 min	1-2	4-6	Clear
Lispro	< 15 min	1-2	3-5	Clear
Glargine	1.5 hr	5	24	Clear
Lente	3-4 hr	4-12	12-18	Cloudy
Detemir	1.5 hr	5	12-24	Clear

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