

Praktikum Daya Terapi Antidot Sodium Nitrit dan Sodium Thiosulfat

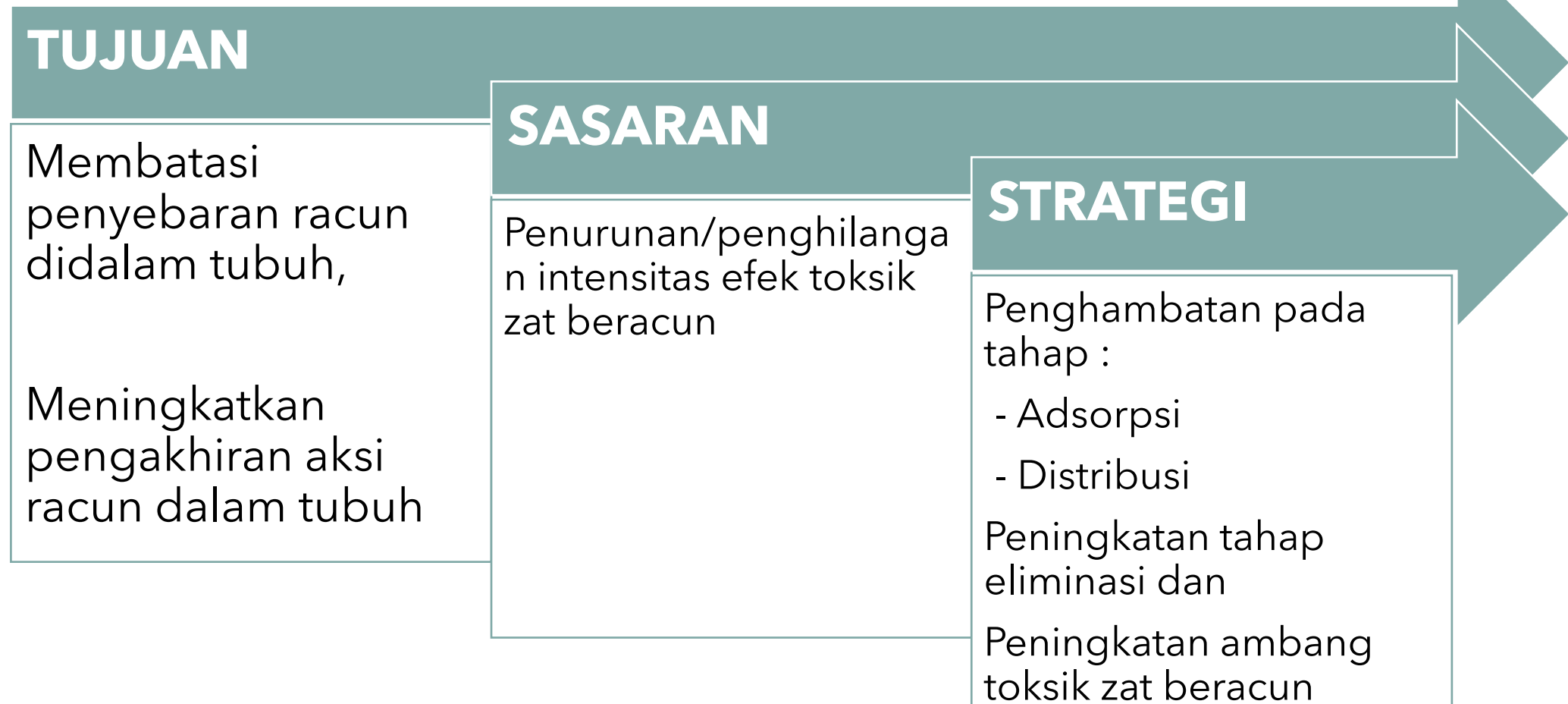
Ilham Perdana



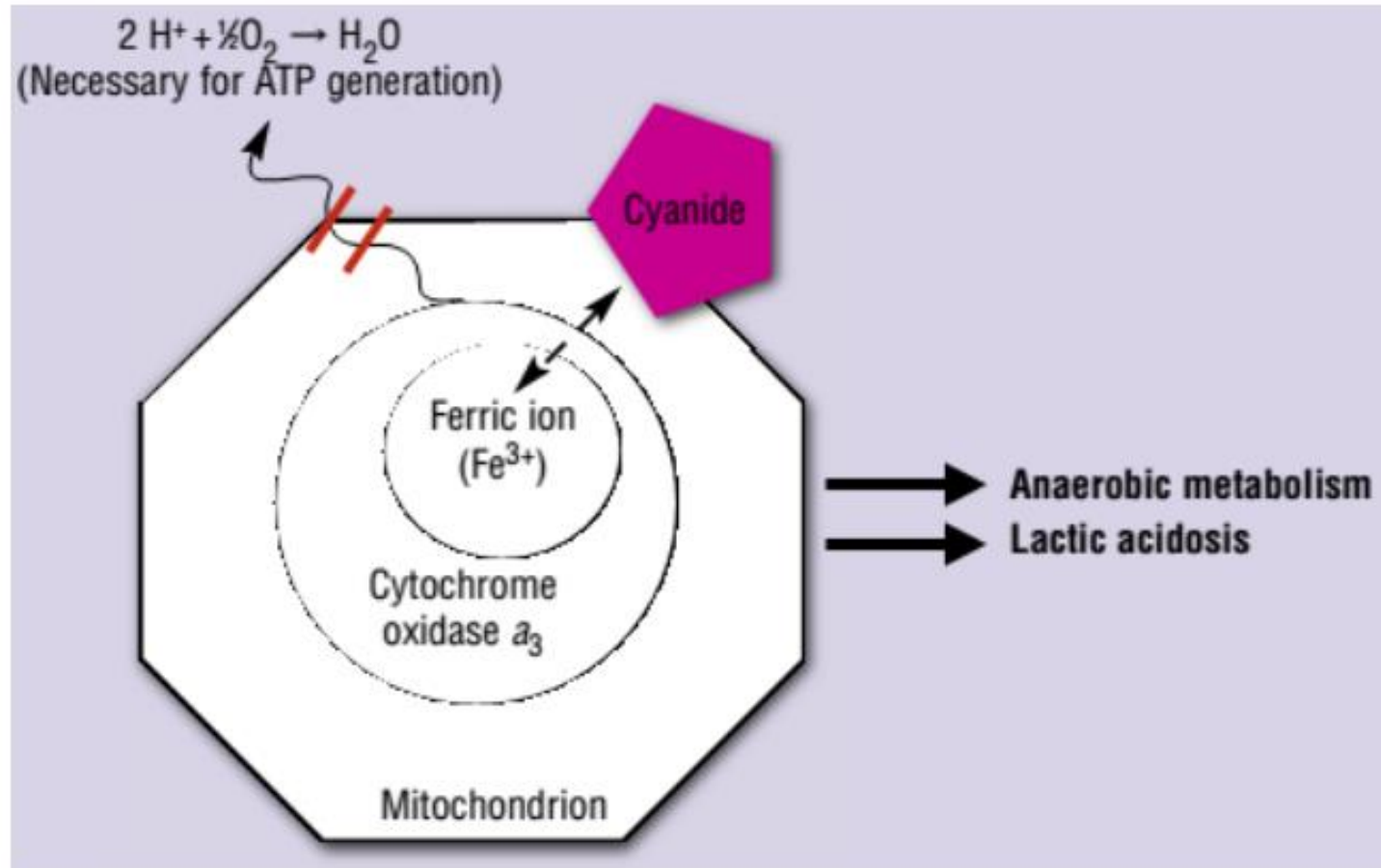
Terapi Antidotum

- Tatacara yang ***secara khusus*** ditunjukkan untuk ***membatasi intensitas*** efek toksik zat beracun atau untuk ***menyembuhkan*** efek toksik yang ditimbulkannya, sehingga bermanfaat untuk ***mencegah bahaya*** selanjutnya.

Terapi Antidotum



Mekanisme Keracunan Sianida



Metode Terapi Antidotum

Metode Khas



Pengukuran Spesifik



Tujuan Spesifik untuk
racun tertentu

Metode Tidak Khas



Terapi Supportive



Tujuan Utama *Life-Saving*

Terapi *Supportive*

- a) Airway : membersihkan jalan udara
- b) Breathing : memelihara pernafasan → O₂
- c) *Circulation and CNS* : menjaga sirkulasi darah → hipotensi (+ infus D10% atau *saline*)
 - memelihara sistem saraf pusat → konvulsi

Tabel 1. Perbedaan mekanisme aksi dan dosis penggunaan kit antidot sianida dan hidroxokobalamin

Medication	Dosing	Mechanism of action
Amyl nitrite	Crushed 0.3-mL ampule inhaled for 15 seconds; may repeat 3-5 minutes until intravenous access established Amyl nitrite should be discontinued once intravenous access is obtained and sodium nitrite infusion is started	Induces methemoglobinemia via oxidation to bind cyanide
Sodium nitrite	300 mg (10 mL in a 3% solution) or 10 mg/kg given intravenously for 3-5 minutes (a rate of 2.5-5 mL/min) in adults 6-8 mL/m ² , or 0.2 mL/kg in children, not to exceed 10 mL	Induces methemoglobinemia via oxidation to bind cyanide
Sodium thiosulfate	1 ampule, or 12.5 g in 50 mL, given intravenously for 30 minutes in adults The dosage for children is 7 g/m ² , not to exceed 12.5 g	Combines with unbound cyanide to form renally excreted thiocyanate
Hydroxocobalamin		
Hydroxocobalamin	5 g for adults, administered intravenously for 15 minutes, repeat a half dose if needed; 70 mg/kg in children	Combines with unbound cyanide to form cyanocobalamin

(Sumber: Jillian, 2011)

Alat dan Bahan

- Alat :
 - ✓ Timbangan
 - ✓ S spuit dan Jarum Injeksi
 - ✓ *Stopwatch*
- Bahan :
 - ✓ 12 ekor Tikus Jantan
 - ✓ Larutan Kalium Sianida 1,5%
 - ✓ Larutan Sodium Nitrit 2%
 - ✓ Larutan Sodium Thiosulfat 25%
 - ✓ Larutan Fisiologis (Salin 0,9%)

Perhitungan Dosis

Sianida 1,5% $\rightarrow 1,5 \text{ g}/100 \text{ mL} = 1500 \text{ mg}/100\text{mL} = 15 \text{ mg/mL}$

Pemberian (mg) = $15 \text{ mg/kg BB} \times \text{berat tikus} = \text{(a)} \text{ mg}$

Pemberian (mL) = $\text{(a)} \text{ mg}/(15 \text{ mg/mL}) = \text{(b)} \text{ mL}$

NaNO₂ 2% (20 mg/kg BB) $\rightarrow 2 \text{ g}/100\text{mL} = 2000 \text{ mg}/100\text{mL} = 20 \text{ mg/mL}$

Pemberian (mg) = $20 \text{ mg/kg BB} \times \text{berat tikus} = \text{(c)} \text{ mg}$

Pemberian (mL) = $\text{(c)} \text{ mg}/(20 \text{ mg/mL}) = \text{(d)} \text{ mL}$

Na₂S₂O₃ 25 % (1125 mg/kg BB) $\rightarrow 25 \text{ g}/100 \text{ mL} = 25000 \text{ mg}/100 \text{ mL} = 250 \text{ mg/mL}$

Pemberian (mg) = $1125 \text{ mg/kg BB} \times \text{berat tikus} = \text{(x)} \text{ mg}$

Pemberian (mL) = $\text{(x)} \text{ mg}/(250 \text{ mg/mL}) = \text{(y)} \text{ mL}$