



# 治療鬱血性心衰竭藥物



# Heart Failure

- ④ Definition:

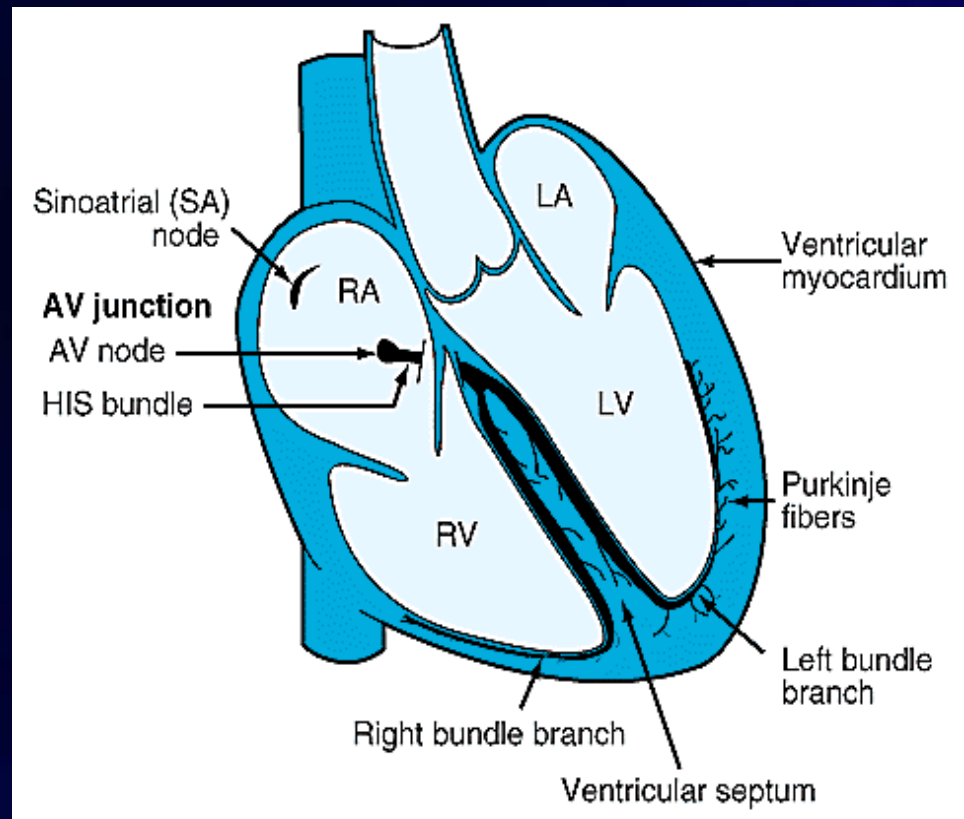
- ④ Heart failure is the inability of the heart to maintain an output adequate to meet metabolic demand of the body

# Etiology of Heart Failure

- ④ Systolic failure
  - ④ Coronary arterial disease
  - ④ Hypertension
  - ④ Dilated cardiomyopathy
- ④ Diastolic failure
  - ④ Hypertension
  - ④ Hypertrophic cardiomyopathy
  - ④ Restrictive cardiomyopathy
  - ④ Constrictive pericarditis
- ④ High-output failure
  - ④ Chronic anemia
  - ④ Atrioventricular shunts
  - ④ Thyrotoxicosis

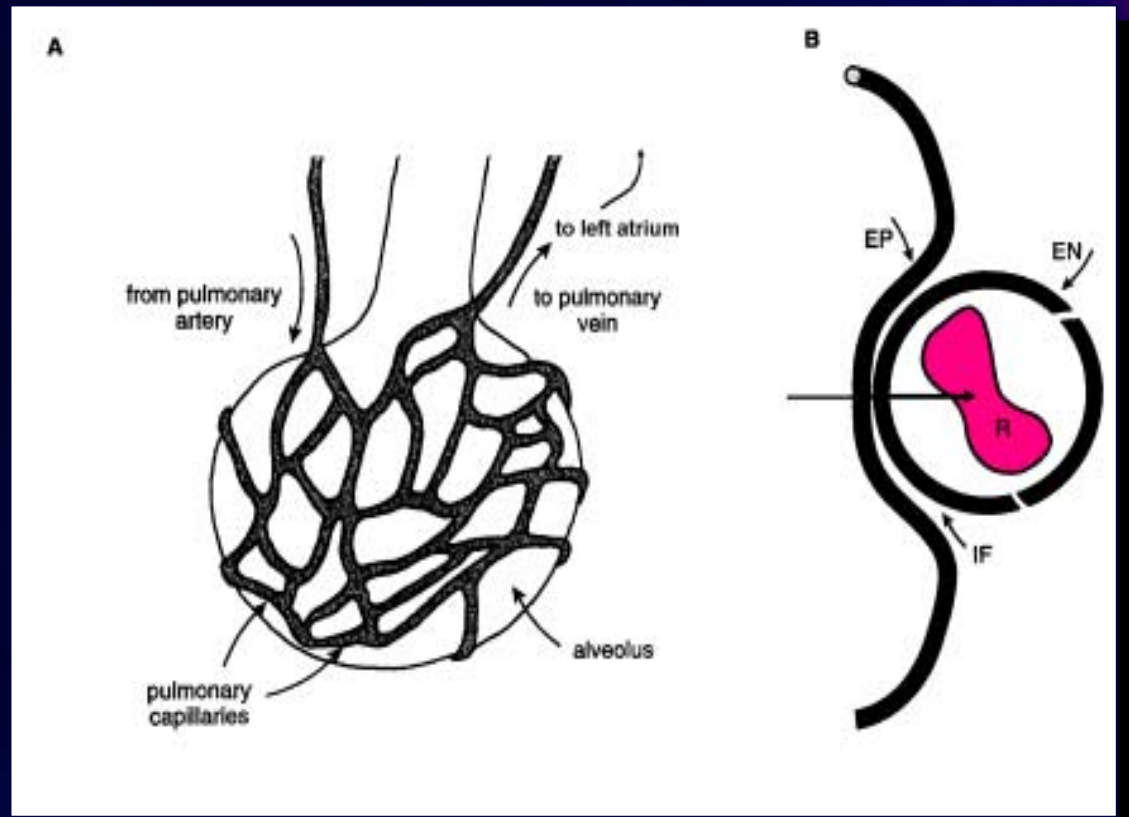
# Heart Failure

- ⊗ Afterload
- ⊗ Preload
- ⊗ Contractility



# Heart Failure

- Raised pulmonary capillary pressure (PCWP)



# 治療心臟衰竭藥物

1. Vasodilators
2. Beta- adrenergic antagonists
3. Digitalis glycosides
4. Diuretics
5. CCB
6. Inotropic agents



# Vasodilators

- ① ACE inhibitors (+ Diuretics)
- ① Hydralazine + Nitrate

Evidence-based studies

→ decreased mortality rate

# Beta- adrenergic antagonists

- ⊗ Chronic heart failure

- ⊗ Carvedilol

- ⊗ Metoprolol

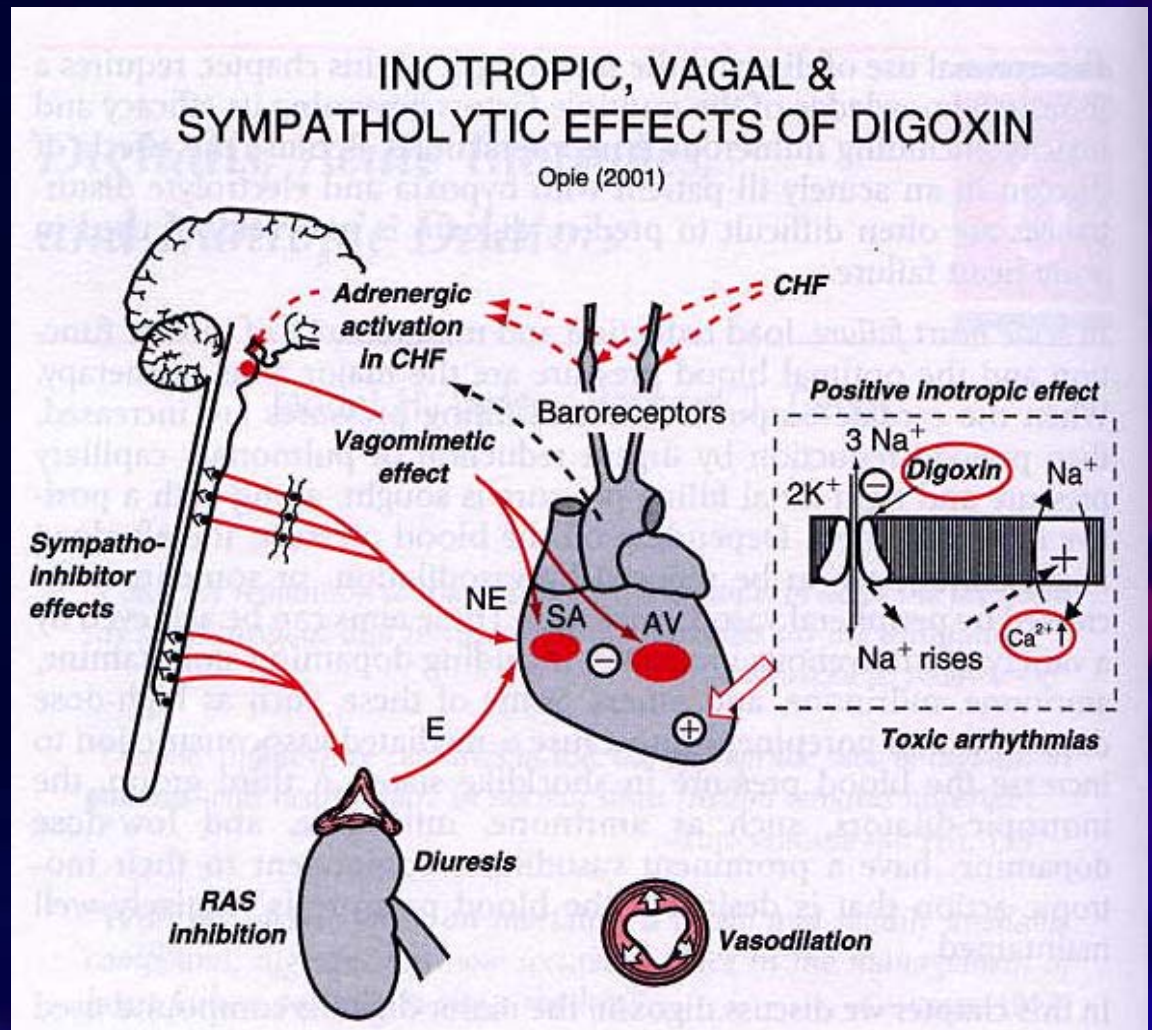
- ⊗ Bisoprolol

Evidence-based studies

→ improve survival rate, functional status

# 治療慢性心力衰竭藥物

## Cardiac Glycoside



# Digitalis Glycoside

- ⊙ Sodium pump inhibition
  - ⊙ Increased cytosolic Ca concentration
  - ⊙ Enhance myocardial contractility
  - ⊙ **Increased theoretical risk of arrhythmia**
- ⊙ Autonomic and renin-angiotensin effects
  - ⊙ Parasympathetic activation
    - ⊙ **Sinus slowing and AV nodal inhibition**
    - ⊙ **Nausea, vomiting, and anorexia**
  - ⊙ Sympathetic inhibition
  - ⊙ Renin release inhibition: decreased activity of renal Na pump with natriuretic effect
    - offset direct vasoconstriction of digitalis

# 其他強心劑

## ● Amrinone

- Phosphodiesterase-III inhibitor

- Inhibit breakdown of c-AMP in cardiac and peripheral vascular smooth muscle

- Resulting in augmented myocardial contractility and peripheral vasodilation

## ● Dobutamine