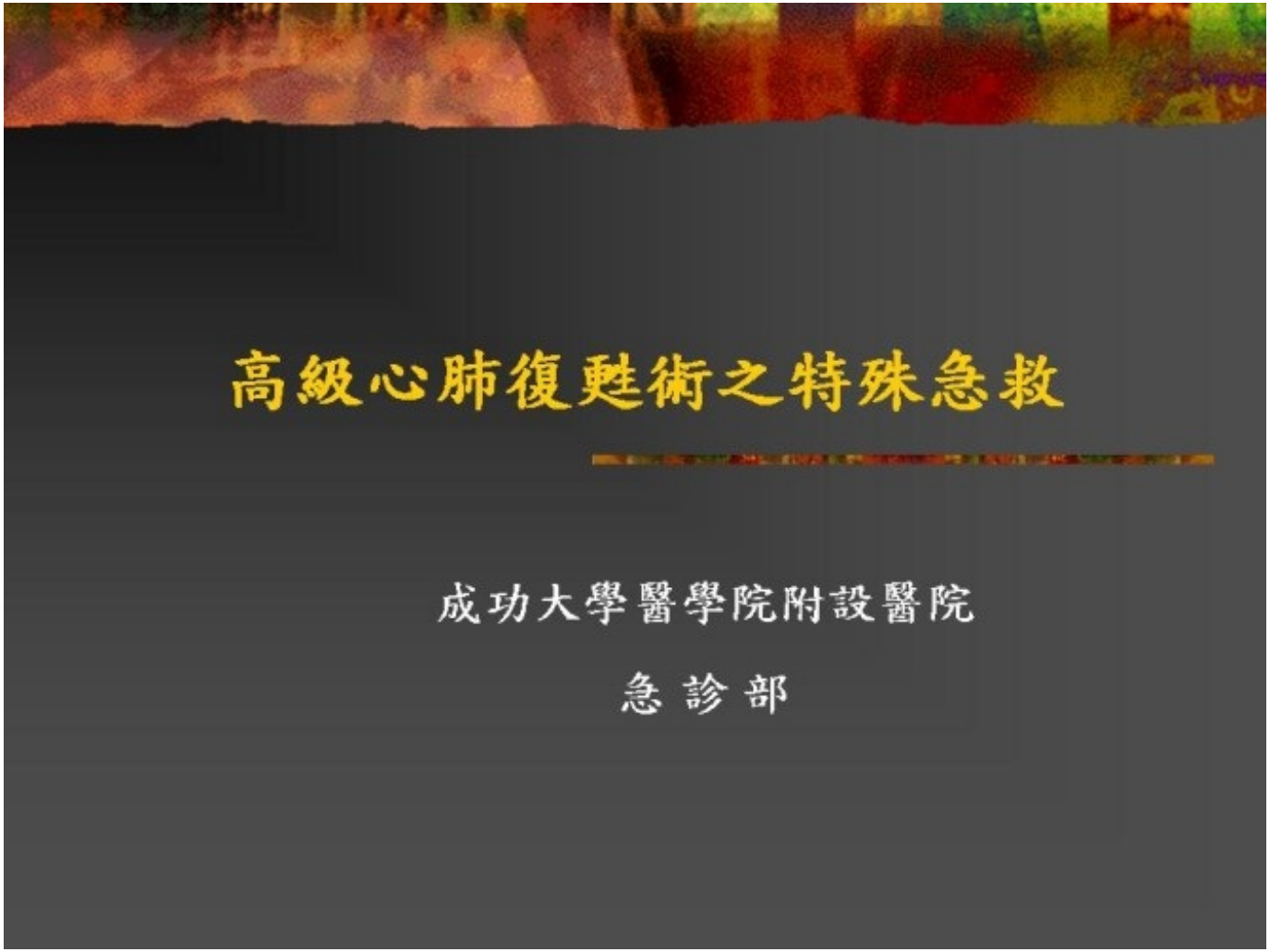

腦中風(Stroke)

~ Era of Reperfusion ~

(" Brain Attack ")

腦 中 風

定義：腦部血流供應受阻導致神經學症狀

- 缺血性腦中風- 血栓或栓塞
- 出血性腦中風- 蜘蛛膜腔下出血或
  腦內出血

腦 中 風

✓危險因子(Risk Factors)

可修正因子	不可修正因子
高血壓	年齡
抽煙	男性
暫時性缺血發作	種族
心臟病	復發性腦中風
糖尿病	遺傳
高凝血狀態	
鐮刀型貧血	
頸部雜音(bruit)	

腦 中 風

臨床症狀 - 暫時性缺血發作(TIA)

Transient Ischemic Attack, recovery in 24 h

頸動脈循環障礙

- 單側肢體輕癱
- 臉部或四肢感覺異常
- 語言障礙
- 視覺障礙
- 單眼偏盲

基底椎動脈循環障礙

- 暈眩
- 視覺障礙
- 複視
- 肢體輕癱或癱瘓
- 肢端感覺異常
- 構音困難
- 步伐不穩

腦 中 風

急診室之檢傷及治療

(NINDS-Recommended Stroke Evaluation)

	Time Target
Door to doctor	10 min
Door to CT completion	25 min
Door to CT reading	45 min
Door to treatment	60 min

腦 中 風

- 迅速確認 (detection)
- 起動緊急救護系統(dispatch)
- 轉送及到院前救護 (delivery)
- 通知責任醫院 (to the door)
- 快速診斷及治療 (data, decision, drug)

腦 中 風

到院前救護

- 確保呼吸道及足夠之通氣
- 經常檢查生命徵象及予以支持性療法
- Cincinnati Prehospital Stroke Scale

急診室之評估及處理 - 自檢傷始

- 意識狀態(昏迷指數)
- 初步神經學檢查
- 成立腦中風小組(stroke team)

腦 中 風

- 緊急神經學評估重點(6 key elements):
  - 腦中風的篩檢及量化(stroke screen or scale)
  - 腦中風的時間及症狀(Time of onset of stroke signs)
  - 意識清醒程度 (level of cons.)
  - 何種型態的中風 (type of stroke)
  - 腦血管病變位置 (location of stroke)
  - 嚴重度如何 (severity of stroke)

腦 中 風

- 腦中風嚴重度(severity of stroke)
  - NIHSS(National Institutes of Health Stroke Scale):
    - 0 – 42 分

    *意識,視覺,運動,感覺,語言,小腦功能
  - Scandinavian stroke scale (含gait評估)
  - SAH scale (Hunt and Hess scale): 1-5 分

腦 中 風

急性腦中風病患之一般性處理:

- 靜脈輸液(x D5w)
- 血糖值測定-finger sugar
- Thiamine 之給予(100 mg, alcoholic patients)
- 氧氣(pulse oximetry)
- Acetaminophen(if fever)
- 禁食-NPO
- Cardiac monitor

腦 中 風

- **Major Changes in 2000 Guidelines**
  - ✓ onset of stroke < 3hrs (Class I) } ⇨ IV t-PA
  - ✓ onset of stroke :3-6 hrs(Class Indeterminate)
  - ✓ MCA infarction : 3-6 hrs (Class IIb) ⇨ IA t-PA
- 是否考慮 thrombolytic therapy ?
  (< 3 hrs, acute ischemic stroke)

腦 中 風

- **Thrombolytic therapy** (AHA recommendations,1996)
  - t-PA iv (0.9 mg/kg, max. 90 mg)
    * 10% dose bolus, 90% dose IVF over 60 min
- **Inclusion and Exclusion criteria:**
  * Caution: NIHSS > 22, recent major infarction (post-infarct. hemorrhage ↑)

腦 中 風

- 緊急血壓治療之原則:

缺血性腦中風 –

✓非使用血栓溶解治療病患: 收縮壓 < 220 mmHg
舒張壓 < 120 mmHg
平均動脈壓 < 130 mmHg

✓使用血栓溶解治療病患: < 185 / 110 mmHg

出血性腦中風 – 收縮壓 < 220 mmHg
舒張壓 < 120 mmHg
平均動脈壓 < 130 mmHg

- Tx by Nitropruside or Labetalol

腦 中 風

- 缺血性腦栓塞血壓需控制情形:
  - Acute myocardial infarction
  - Aortic dissection
  - True hypertensive encephalopathy
  - Severe LV failure
- ✕ Adalat SL. -> precipitous BP drop

腦 中 風

- 抗凝血劑之使用

  low-molecular-weight heparin (< 48 hrs?)

- 腦壓過高之處理

  ✓ **Rapid-sequence intubation** (lidocaine, thiopental)

  ✓ **$PaCO_2$: keep 30-35 mmHg**

  mannitol (0.5-2g/kg), Lasix, acetazolamide.

- 抽搐之處理

  Diazepam, lorazepam, dilantin, phenobarbital.

如何評估體溫

1. What is the core temperature ?
2. How to detect the core temperature? Which is better and accurate?
3. What is fever or hyperthermia? --an oral temperature over 36.8°C?
4. Axillary temperature is 0.5°C lower than oral temperature.
5. Rectal temperature is 0.5°C higher than oral temperature.
6. Oral thermometer VS ear thermometer.
7. Can ear thermometer detect the exact core temperature?----No
8. What is the limits of conventional thermometer?-----35-42°C

體溫調節

- 體溫調節中心位於下視丘
- Core temperature = the balance of heat production and loss
- Heat production
- Muscle contraction and metabolic effect, exercise or seizure
- Febrile disorder, infection reset the thermoregulatory center and induce vasoconstriction (chillness) or shivering (chills)
- Medication, cocaine or amphetamine or anti-cholinergic drugs

4. Heat loss:

- radiation, convention, conduction, evaporation

Heat stroke

- Triad: Core temperature >40.5 ℃, CNS dysfunction, Anhidrosis
- Classical heat stroke:

Elderly, chronic illness, dehydration, heat exposure for several days during heat wave and high humidity enviroment,50% patients with infection, lack air-conditioner, mortality of 70%.

- Exertional heat stroke:

Soldiers exercise in high temperature and humidity environment, complicated with DIC, rhabdomyolysis, and multiple organ failure