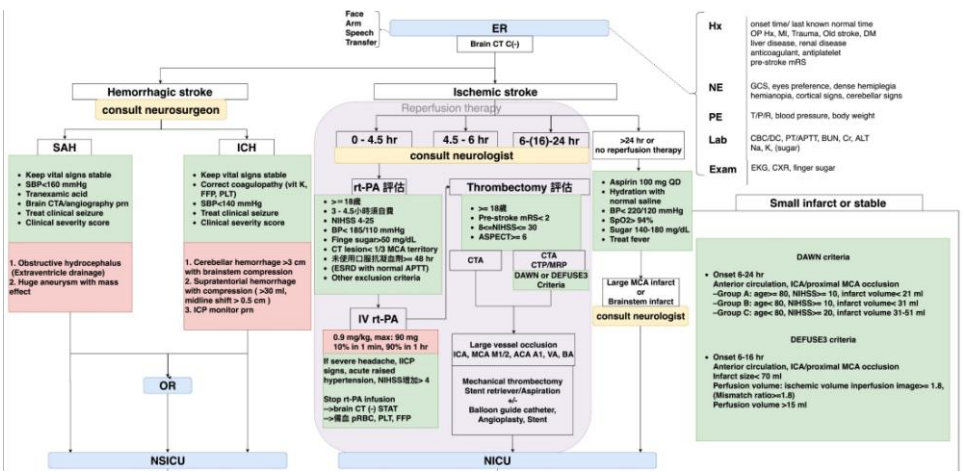
急性腦中風急診作業

急診醫學科
鄭憲鴻

急診中風流程



Initial Approach: Hx

- Onset time/Last known normal time/Acute stroke < 24 hours
- Past history: OP, old stroke, DM, Liver cirrhosis, renal disease
- Drugs: Anticoagulant, antiplatelet
- Pre-stroke mRS

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Initial Approach: PE & NE

- Vital sign
- Body weight
- GCS: gaze preference, dense hemiplegia, hemianopia, cortical signs (aphasia, neglect, visual field defects), cerebellar signs (ataxia, nystagmus, dysmetria)

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Initial Approach: Stabilization

- Airway
- Breathing, Oxygen saturation >**94%**
- Nothing by mouth (aspiration)
- Strict bed rest (falls)

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Initial Approach: Exam

- Finger sugar (treat if < **60**mg/dL)
- **Brain CT C(-)** (door-to-CT<**25**(20) minutes)
- IV access (Do not delay brain imaging)
  CBC/DC, PT/APTT, BUN, Cr, Na, K
- EKG (Do not delay rt-PA)
- CXR

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Initial Approach: Consultation

- Candidate for reperfusion therapy: consult neurologist
- 目標: 搶救penumbra (缺血但還沒死亡的腦組織)
- Reperfusion: IV rt-PA/Endovascular therapy

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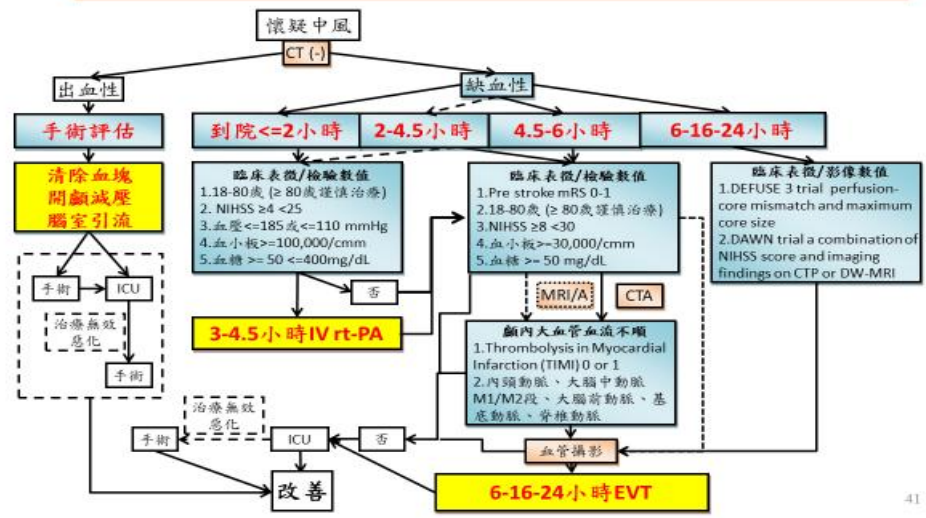
急性腦血管疾病流程



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Brain CT

- **Hemorrhagic stroke**: consult neurosurgeon
- **Ischemic stroke**
  - ✓ Candidate for reperfusion therapy: consult neuro
  - ✓ 0-3 hr rt-PA:健保
  - ✓ 3-4.5 hr rt-PA:自費
  - ✓ 前循環 < 8 hr : CTA/CTP, thrombectomy評估
  - ✓ 後循環 <24 hr: CTA/CTP, thrombectomy評估
  - ✓ Not candidate for reperfusion therapy: aspirin, normal saline, BP<220/120, consult neuro if large MCA or brainstem infarct

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2018-2019 Guidelines for the Early Management of Patients With Acute Ischemic Stroke

- CT within 20 minutes ≥50%
- Door-to-needle time within 60 mins ≥50% of patients, may establish a secondary DTN time goal within 45 minutes in ≥50% of patients
- EVT, ECG, troponin should not delay IV t-PA
- Only the assessment of **blood glucose** must precede the initiation of IV t-PA
- Receive IV t-PA: BP < **185/110** mmHg
- IV t-PA for acute ischemic stroke **3/4.5/9** hr
- Endovascular Therapy < 6/24hr

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Endovascular theapy後血壓控制

Thrombolysis in Cerebral Infarction perfusion (TICI) grading

Grade 0: no flow

Grade 1: minimal recanalization (220/120)

Grade2a: partial filling smaller than 2/3 territory (180105)

Grade2b: nearly completely or completely with delay flow (140/90)

Grade 3 : completely reperfusion

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健保

- 急性缺血性腦中風處置費 (代碼47101B 點數:13866 107/02~)
- 適應症 :急性缺血性中風病患符合「靜脈血栓溶解治療收案條件」並於三小時內開 始靜脈注射

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健保

- 急性缺血性腦中風機械取栓術 Fee for neurovascular mechanical endovascular thrombectomy in acute ischemic stroke (編號:33143B 點數:45059 107/02~)
- 適應症：急性腦血管缺血性中風病患符 合「顱內血管支架取栓裝置使用條件」， 並使用該裝置進行機械性血管內血栓移除術治療，且同時符合下列條件： (1)前循環在發作內8小時內、後循環在發 作後24小時內。 (2)影像診斷為顱內大動脈阻塞，包括內頸動脈、大腦中動脈的第1及第2段、 大腦前動脈、基底動脈和脊椎動脈。 (3)美國國衛院腦中風評估表(NIH Stroke Scale)評分≧8及≦30。
- 禁忌症： (1)蜘蛛網膜下腔出血 (2)腦內出血 (3)硬腦膜下出血/顱內出血

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註1

- 若EMT到院前已聯絡為4.5小時內中風病人，檢傷可將病人姓名先寫為”疑中風”。
- 若病史中有以下任一項，則不須再執行4.5小時處置流程: A.過去中風合併糖尿病 B.腦出血病史 C.正在服用新型口服抗凝血劑如rivaroxarban、dabigatran、apixaban
- t-PA治療同意書的醫師說明欄由急診醫師簽章
- 會診神內或是外院轉診缺血性中風再灌流治療的單一窗口為HIS系統上會診之神內醫師
- 小於24小時之輕微缺血性中風(NIHSS score ≤ 3) 病人使用dual antiplatelet therapy有好處，但健保不給付clopidogrel，這時會診神經科看適不適合自費使用clopidogrel

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註2

- 無服用口服抗凝血劑或使用heparin的病人，可在檢驗結果出來前先行施打rt-PA，但若是檢驗結果INR> 1.7或PT延長的話，則應終止rt-PA的施打
- 若病人過去無血小板低下病史，可在檢驗結果出來前先行施打rt-PA，但若是檢驗結果血小板<100 000/mm³ ，則應終止rt-PA的施打
- NIHSS 8分約為一側手腳肌力0-3分+顏面歪斜+口齒不清，有疑慮可會診神經科，此為8小時內EVT流程。而外院轉診，以接收為原則。
- 開立CTA以creatinine<=2.0為原則，Barcode請打CVACTA
- 開立顱內血栓移除醫囑，Barcode請打CVAT

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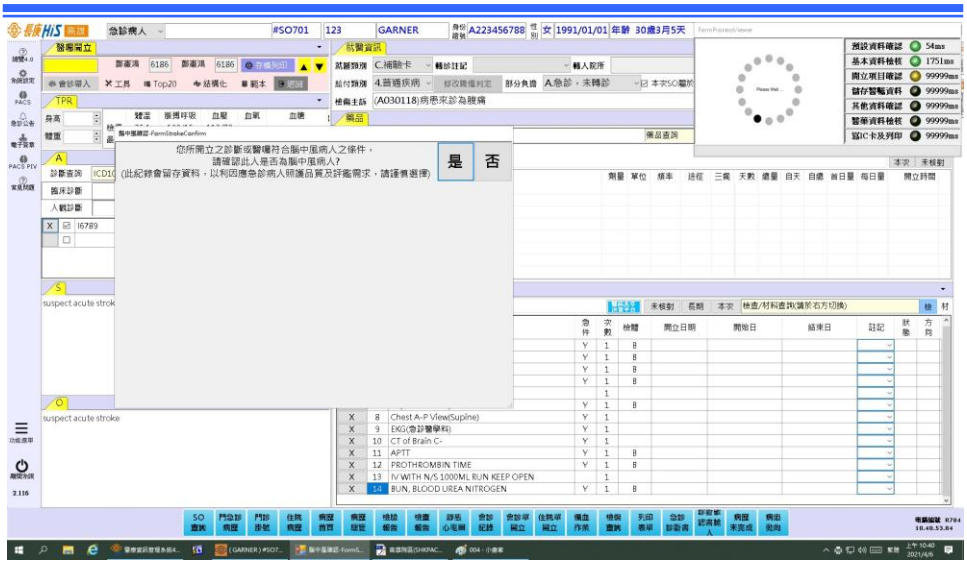
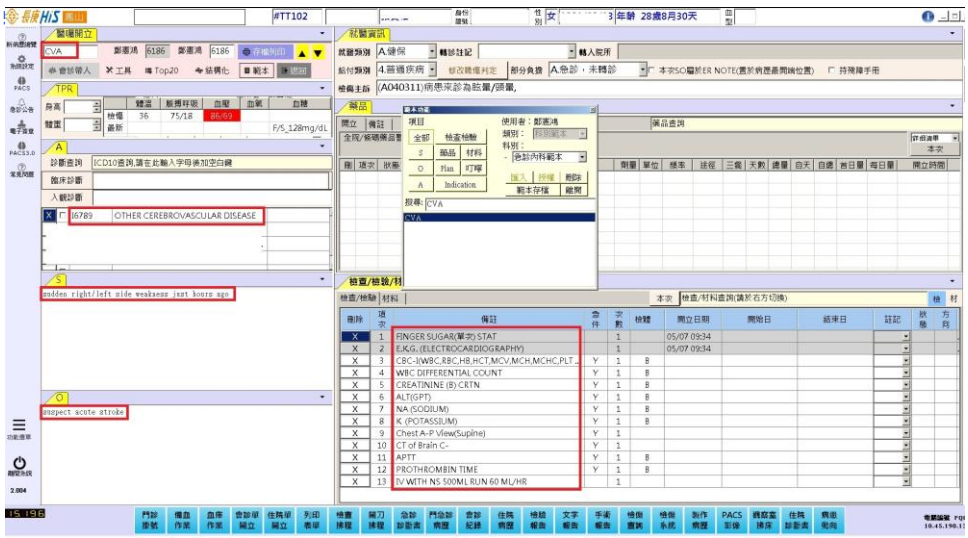
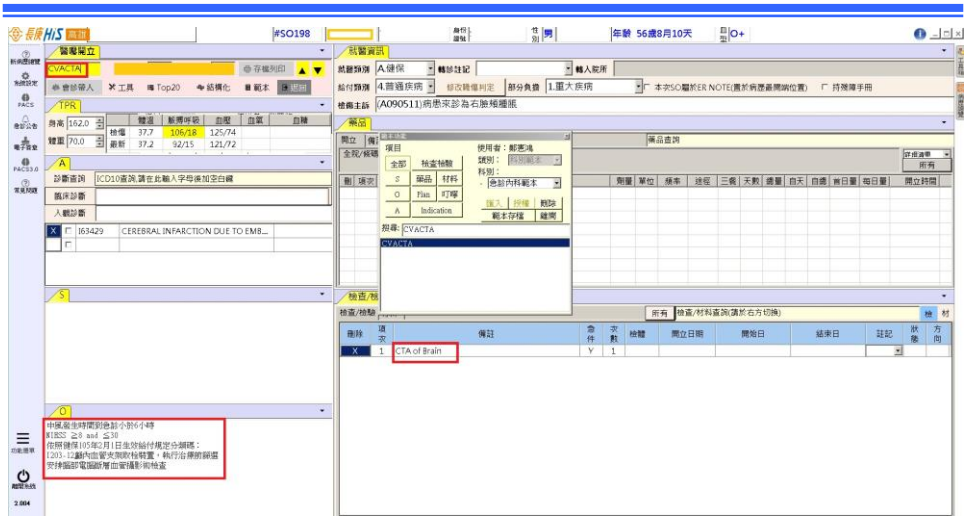
急診診斷確認中風



急診診斷確認中風


您所開立之診斷或醫囑符合腦中風病人之條件，
請確認此人是否為腦中風病人?
(此紀錄會留存資料，以利因應急診病人照護品質及評鑑需求，請謹慎選擇)
是
否
請回答左列問題
此病人之腦中風症狀時間為?
2.5 小時內
2.5~12小時
12小時以上
此病人之腦中風嚴重度為?
意識障礙或單側肌力0-2級
病情輕微
確定送出
注意!!確定送出後會將此次主診斷改為
I6789 CVA, ACUTE CEREBROVASCULAR DISEASE


I6789
OTHER CEREBROVASCULAR DISEASE
sudden right/left side weakness just hours ago
suspect acute stroke
FINGER SUGAR(單次) STAT
EKG,(ELECTROCARDIOGRAPHY)
CBC-I(WBC,RBC,HB,HCT,MCV,MCH,MCHC,PLT...
WBC DIFFERENTIAL COUNT
CREATININE (B) CRTN
ALT(GPT)
NA (SODIUM)
K (POTASSIUM)
Chest,A-P View(Supine)
CT of Brain C-
APTT
PROTHROMBIN TIME
IV WITH NS 500ML RUN 60 ML/HR


#SO198
年齡 56歲8月10天
CVACTA
CTA of Brain

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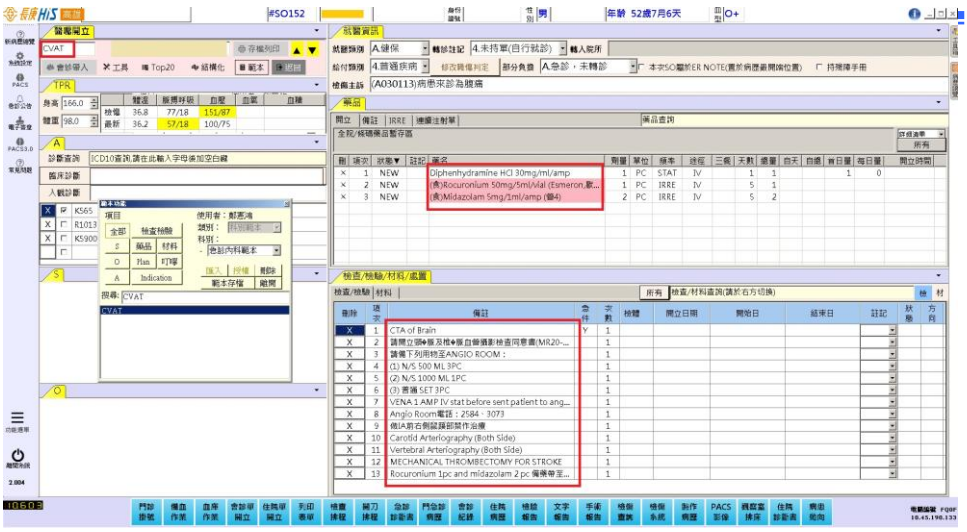
#SO152
年齡 52歲7月6天
CVAT
Diphenhydramine HCl 30mg/ml/amp
(禁)Rocuronium 50mg/5ml/vial (Esmeron,歐...
(禁)Midazolam 5mg/1ml/amp (管4)
CTA of Brain
請開立頭➡腦及椎➡腦血管攝影檢查同意書(MR20-...
請備下列用物至ANGIO ROOM：
(1) N/S 500 ML 3PC
(2) N/S 1000 ML 1PC
(3) 普通SET 1PC
VENA 1 AMP IV stat before sent patient to ang...
Anglo Room電話：2584、3073
做IA前右側鼠蹊部製作造瘻
Carotid Arteriography (Both Side)
Vertebral Arteriography (Both Side)
MECHANICAL THROMBECTOMY FOR STROKE
Rocuronium 1pc and midazolam 2 pc 備藥帶至...

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Reference

- Guidelines for the Early Management of Patients With Acute Ischemic Stroke: 2019 Update to the 2018 Guidelines for the Early Management of Acute Ischemic Stroke
- 健保署網站
- 2019台灣腦中風學會急性缺血中風靜脈血栓溶解治療指引

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