

GUIDELINE FOR MANAGEMENT OF ACUTE INTRACEREBRAL HAEMORRHAGE

TARGET AUDIENCE	Secondary Care
PATIENT GROUP	Adults presenting with symptoms of acute stroke, whose imaging confirms intracerebral haemorrhage (ICH) Subarachnoid haemorrhage, subdural/extradural haematoma, traumatic intracerebral haemorrhage are NOT covered by this guideline

Clinical Guidelines Summary

SITUATION	ACTION
Patient presents with acute stroke	Pre-alert – contact stroke nurse on DECT phone Assess in ED: GCS, NIHSS, BP, NEWS, ECG, Swallow screen Baseline function/frailty Urgent CT brain
CT scan shows ICH:	
Anticoagulation	Check clotting and platelets Drug history – warfarin, factor Xa inhibitor (apixaban/ rivaroxaban/ edoxaban), dabigatran, antiplatelets See below for specific treatment
Blood Pressure	Uncertainty exists re benefits of BP lowering acutely in ICH Treat other causes of ↑BP – pain, urinary retention, nausea Safe to continue pre-stroke anti-hypertensives
Neurosurgery	Refer urgently if: (any or all of) Posterior fossa haematoma Intraventricular haemorrhage with GCS ≤ 8 Hydrocephalus
Additional imaging	See guideline for detail
Place of Care	Admit to stroke unit Thromboprophylaxis – intermittent pneumatic compression
Manage Complications	Seizures – no evidence for prophylactic anticonvulsants Treat seizures if occur Monitor GCS and neurology (NIHSS) – if deteriorates re-CT urgently
Anticipatory Care	Some patients may make a good recovery after ICH- even relatively large ICHs. Do not assume the worst too early

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Who is this guidance intended for?

This guidance is intended for use in ED, medical receiving, medical wards, stroke units, in NHSL. This guideline covers patients presenting with an acute stroke syndrome, whose imaging confirms intracerebral haemorrhage,

This guideline does not cover patients presenting with subarachnoid haemorrhage, subdural haemorrhage, extradural haemorrhage, traumatic intracerebral haemorrhage, or ICH secondary to another cause (e.g. venous sinus thrombosis, tumour, post thrombolysis).

Presentation

Patient presents with acute stroke syndrome. Pre-alert by ambulance. ED contact stroke nurse via dedicated DECT phone to come to ED to assess:

Hairmyres – DECT 5138 (external dial 01355 585138)

Wishaw - DECT number 6892 (external dial 01698 366892)

Monklands – DECT 404412 (external dial 01698 753412)

Assess in ED: GCS, NIHSS, BP, NEWS, ECG, Swallow screen. Establish pre stroke function, can use clinical frailty scale (CFS) or modified Rankin. This may be helpful in determining prognosis, and making decisions regarding neurosurgery or HDU/ITU.

Urgent CT brain

CT scan

Features to note on CT scan are haematoma size/volume, and location (superficial/lobar, deep, posterior fossa). The presence of intraventricular extension and presence or absence of hydrocephalus should be assessed.

Immediate management

Anticoagulation Reversal

Warfarin: For patients taking warfarin, check urgent INR. Warfarin should be reversed with beriplex and/or vitamin K according to local haematology guidelines (guidance on reverse of warfarin chart and from blood bank). Patients on warfarin for prosthetic heart valve should be urgently discussed with cardiology and stroke on call prior to reversing warfarin.

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Factor Xa inhibitor: Apixaban/ Edoxaban/ Rivaroxaban: if reversal is needed give Beriplex (25-50 units/kg), (advice available from haematology on call). Andexanet alfa is a specific factor Xa reversal agent - it is **not** routinely advised in spontaneous ICH (outwith clinical trials) - please discuss with stroke consultant on call first if you are considering this.

Dabigatran: Consider use of idarucizumab. Check thrombin time urgently. Seek advice from haematology on call. Note there is a thrombotic risk related to reversing dabigatran (related to their prior risk and indication for being on it).

Antiplatelets: There is no evidence to support routine use of platelet transfusion - may be harmful. Suspend antiplatelets. Patients with specific indication to continue, e.g. recent coronary stent, should be discussed on individual basis with relevant specialty eg cardiology, and stroke consultant.

Coagulopathy/severe thrombocytopenia – discuss with Haematology on call

Blood Pressure

Uncertainty exists re benefits of BP lowering acutely in ICH. Hypertension should not routinely be lowered early in spontaneous ICH.

Look for and treat other causes of hypertension – pain, urinary retention, nausea.

If patients are able to swallow it is safe to continue their pre-stroke antihypertensives.

Where systolic BP is between 150-220mmHg, BP should not be lowered <140mmHg systolic. Sudden drop in BP should be avoided. Acute lowering to systolic BP <130mmHg is potentially harmful and should be avoided.

Neurosurgery

Patients with the following should be referred urgently to neurosurgery:

- Posterior fossa haematoma
- Intraventricular haemorrhage with GCS \leq 8
- Hydrocephalus

According to National Guidelines (NICE 2019), people with the following rarely require surgery and should be treated with medical treatment initially: GCS motor (M) score of 6, keenly alert, keenly, no suspicion of an underlying neurovascular or malignant lesion, no pre-existing ventriculoperitoneal shunt, small deep haematoma on CT, lobar ICH without either hydrocephalus or rapid neurological deterioration, GCS < 8 unless this is because of hydrocephalus, large haemorrhage and significant pre-stroke co-morbidity.

Those who do not require neurosurgery should be observed, and consider re-scan and referring if the above parameters change.

Some patients will not be suitable for neurosurgical intervention based on pre stroke morbidity or frailty. For these patients consideration should be given to appropriate anticipatory care planning, and avoid repeating imaging if it will not change their management.

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Additional Imaging

Additional imaging may be requested acutely if it will help determine an underlying cause. Intracranial CT angiogram should only be undertaken following discussion with neurosurgery or radiology.

Repeat CT brain should be undertaken urgently for patients whose clinical condition has changed and may now require neurosurgery based on the above criteria.

If cerebral venous sinus thrombosis suspected as cause of ICH urgent CT venogram should be undertaken.

Place of Care

Patients with acute ICH should be looked after in an acute stroke unit. Attention should be paid to supportive care, including thromboprophylaxis with intermittent pneumatic compression, assessing swallow, ensuring adequate hydration, and management of co-morbidities.

Management of Complications

Monitor GCS and NIHSS. Deteriorating conscious level or worsening neurological deficit requires prompt reassessment, and consideration of repeat imaging and/or discussion with neurosurgery (see above).

There is no evidence to support routine use of anticonvulsants for seizure prophylaxis. Seizures occurring acutely should be managed appropriately. There is no specific guidance for how to manage seizures in the context of acute ICH, and they should be managed as you would usually.

Points to consider

Some patients may make a good recovery after ICH- even relatively large ICHs. Do not assume the worst too early.

Some will have an ICH that is not survivable (due to the ICH or patient factors such as pre-morbid frailty/comorbidity). Ensure adequate discussion with patient and/or next of kin, ensure symptoms are anticipated and appropriately treated (pain, seizures, secretions, nausea and vomiting).

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References

Stroke and transient ischaemic attack in over 16s: diagnosis and initial management NICE guideline [NG128] Published: 01 May 2019 Last updated: 13 April 2022

Greenberg, S., Ziai, W., Cordonnier, C., Dowlatshahi, D., Francis, B., Goldstein, J., Hemphill, J., Johnson, R., Keigher, K., Mack, W., Mocco, J., Newton, E., Ruff, I., Sansing, L., Schulman, S., Selim, M., Sheth, K., Sprigg, N. and Sunnerhagen, K. 2022 Guideline for the Management of Patients With Spontaneous Intracerebral Hemorrhage: A Guideline From the American Heart Association/American Stroke Association. Stroke, 53(7).

M Irem Baharoglu, Prof Charlotte Cordonnier, Prof Rustam Al-Shahi Salman, Koen de Gans, Maria M Koopman, Prof Anneke Brand et al: Platelet transfusion versus standard care after acute stroke due to spontaneous cerebral haemorrhage associated with antiplatelet therapy (PATCH): a randomised, open-label, phase 3 trial; The Lancet, 387, 2605-2613, June 25, 2016

Craig S. Anderson, Emma Heeley, Yining Huang, Jiguang Wang, Christian Stapf, M.D., Candice Delcourt, M.D., Richard Lindley, M.D., Thompson Robinson, M.D., Pablo Lavados, M.D., M.P.H., Bruce Neal, M.D., Ph.D., Jun Hata, M.D., Ph.D., Hisatomi Arima, M.D., Ph.D., et al., for the INTERACT2 Investigators; Rapid Blood-Pressure Lowering in Patients with Acute Intracerebral Hemorrhage; New Engl J Med 2013; 368:2355-2365, June 20, 2013

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Appendices

Governance information for Guidance document

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CONSULTATION AND DISTRIBUTION RECORD	
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Consultation Process / Stakeholders:	<p>This document has been emailed to colleagues in ED, Haematology, Radiology and Stroke for review during its development. The following people have reviewed and offered specific input:</p> <p>Dr Nicola Moultrie, Dr Annielle Hung, Prof Mark Barber, Dr Caroline McInnes, Dr Greig Loudon, Dr Luke Yates, Dr Phil Birschel, Dr Mohanned Ibrahim, Dr Peter Higgins</p>

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Distribution	
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CHANGE RECORD

Date	Lead Author	Change	Version No.
		<i>e.g. Review, revise and update of policy in line with contemporary professional structures and practice</i>	1
			2
			3
			4
			5

2. You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

e.g. supporting documents for implementation of guideline, patient information, specific monitoring requirements for secondary and primary care clinicians, dosing regimen/considerations according to weight and/or creatinine clearance

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