



Aspek Medis Penderita Stroke

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KSM BEDAH SARAF RSUP Dr KARIADI/FK UNDIP





brain*



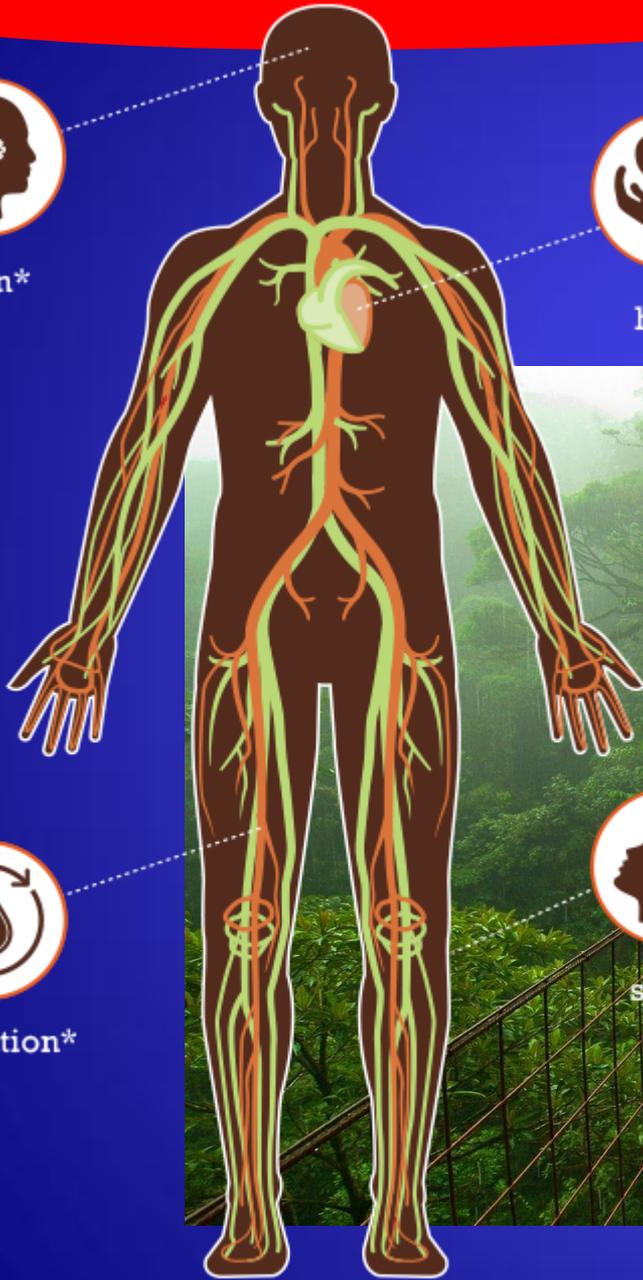
heart*



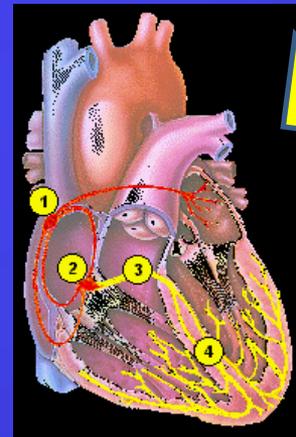
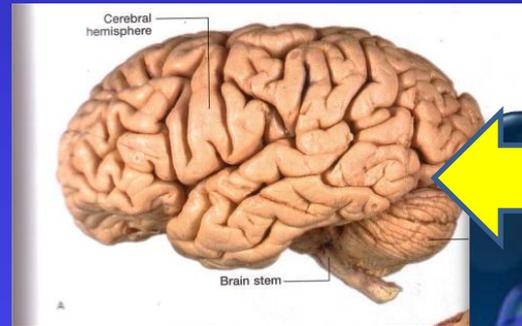
circulation*



skin*



- Berat otak 2% → Otak menerima 15 % aliran darah.
- Konsumsi oksigen 20 %
- ADO 50 ml/100 gr/menit
- Metabolisme otak TINGGI
- Tidak punya simpanan



Prinsip dasar
Stroke

Pengambilan
keputusan

Informed
consent

Transportasi

Terapi definitif

Dukungan
nutrisi

Stabilisasi

Pemeriksaan klinis
neurologis

Perawatan
intensif

Stabilisasi

operasi

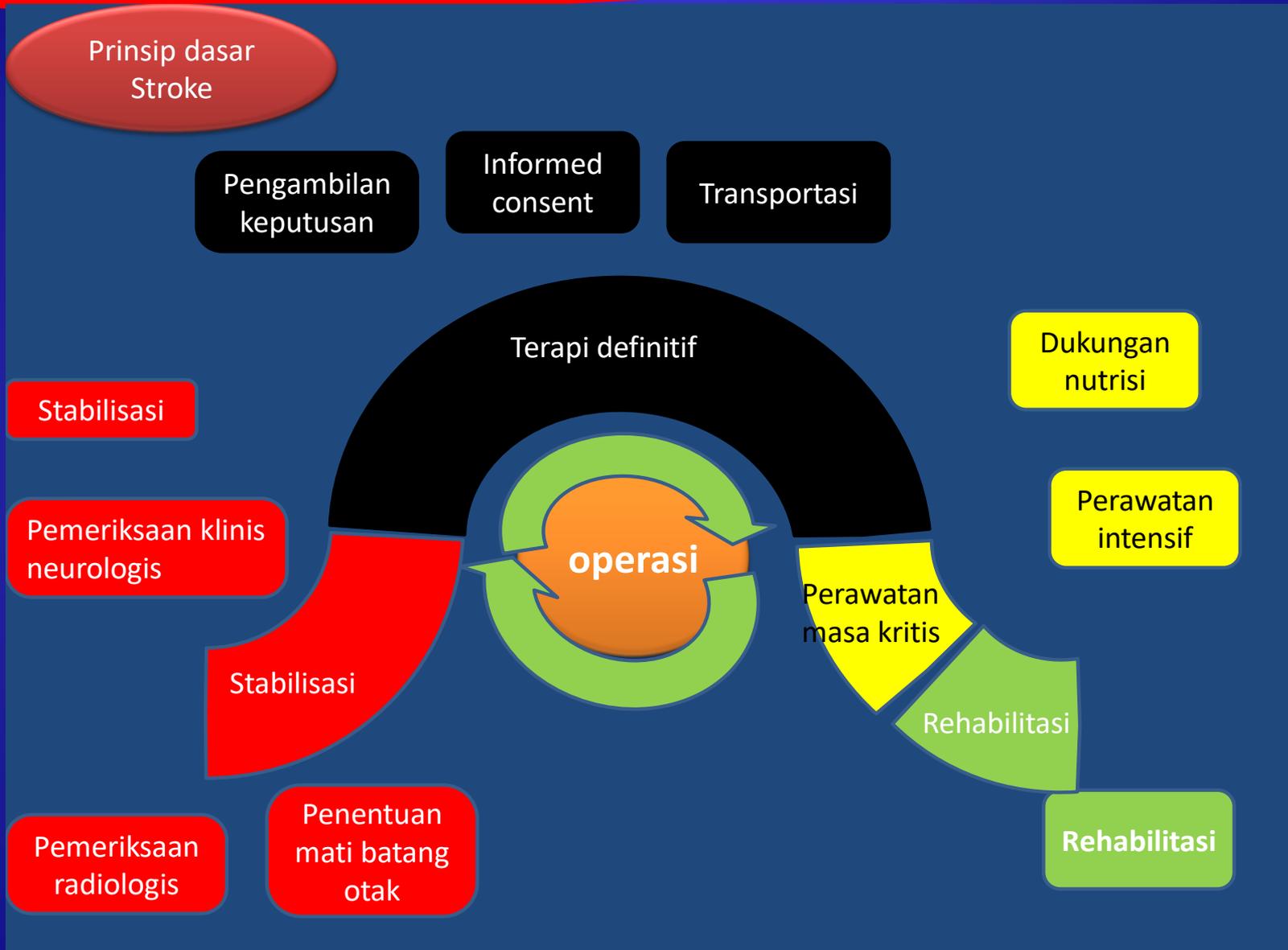
Perawatan
masa kritis

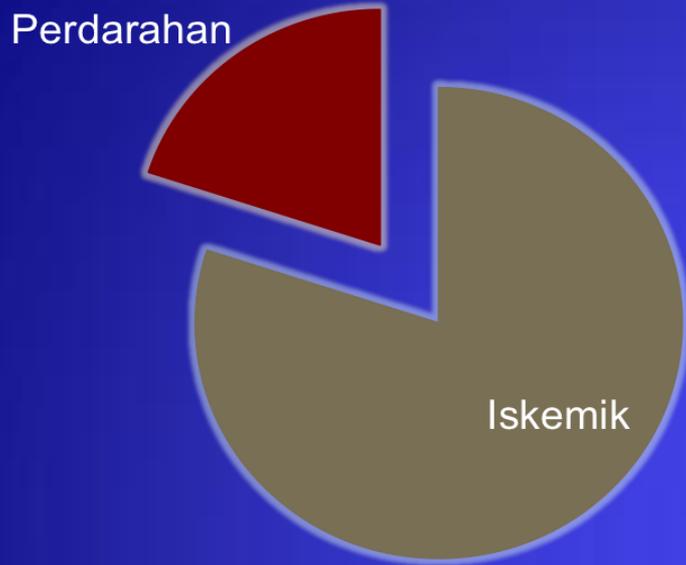
Rehabilitasi

Pemeriksaan
radiologis

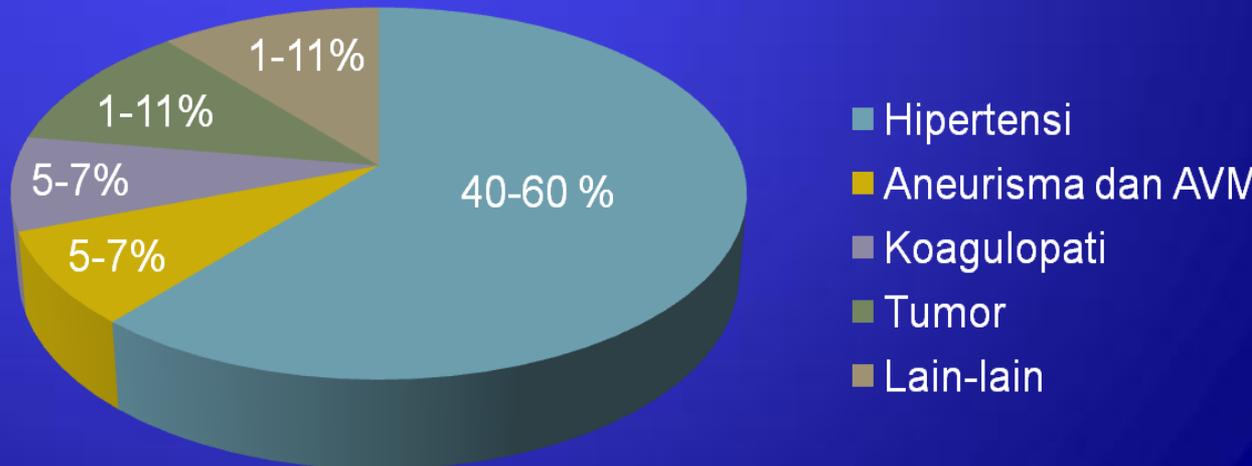
Penentuan
mati batang
otak

Rehabilitasi

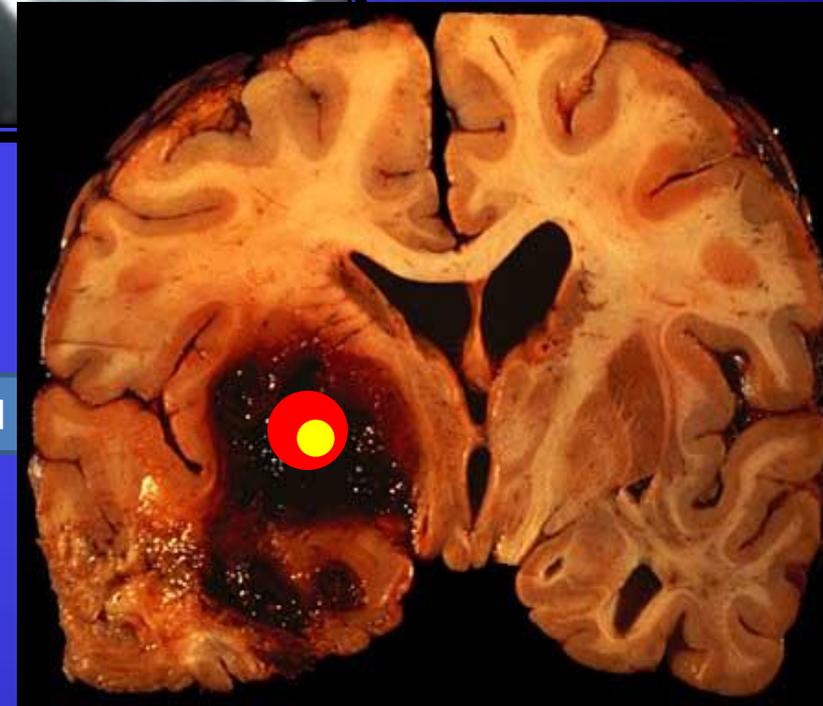
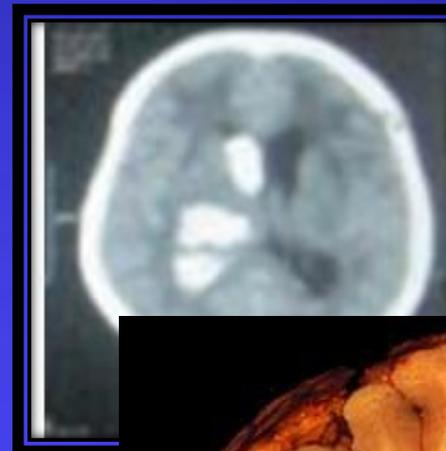
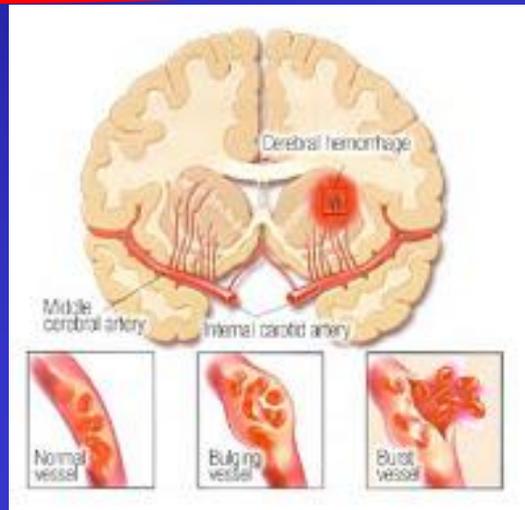
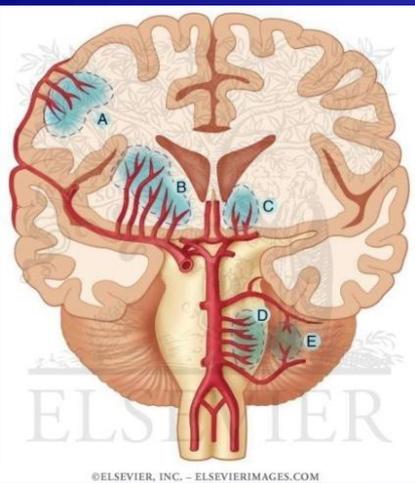




Insidensi etiologi perdarahan intracerebral spontan



Patofisiologi



Hipertensi

ICH

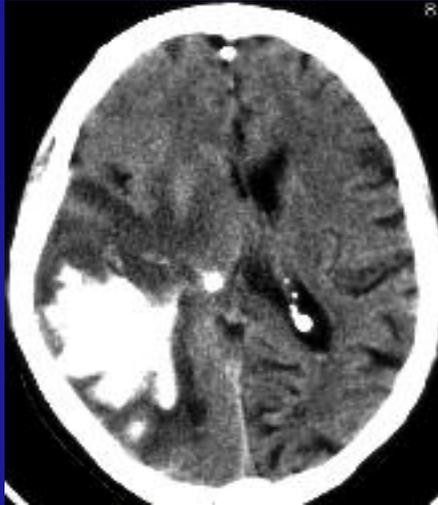
IVH

Stage	Tekanan darah	Relative Risk
Pre hipertensi	120-139/80-89	2,2
I	140-159/90-99	5,3
II	160-179/100-109	10,4
III	≥190/≥110	33,3

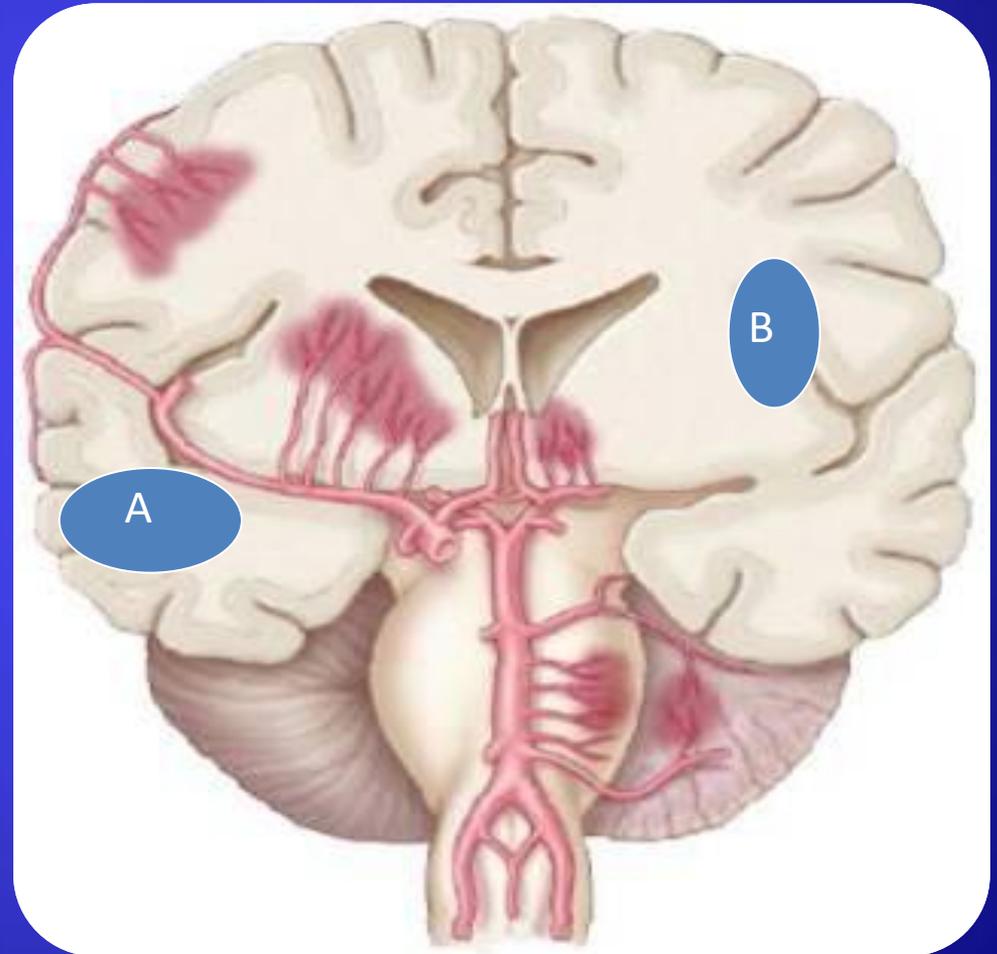
Hidrosefalus

Tipe dan Lokasi Perdarahan Otak

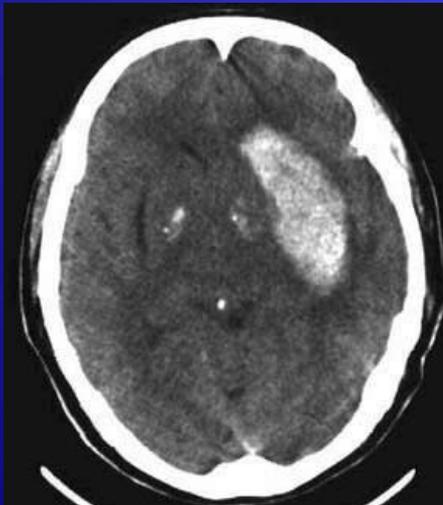
- Supratentorial



A



B



Tipe dan Lokasi Perdarahan Otak

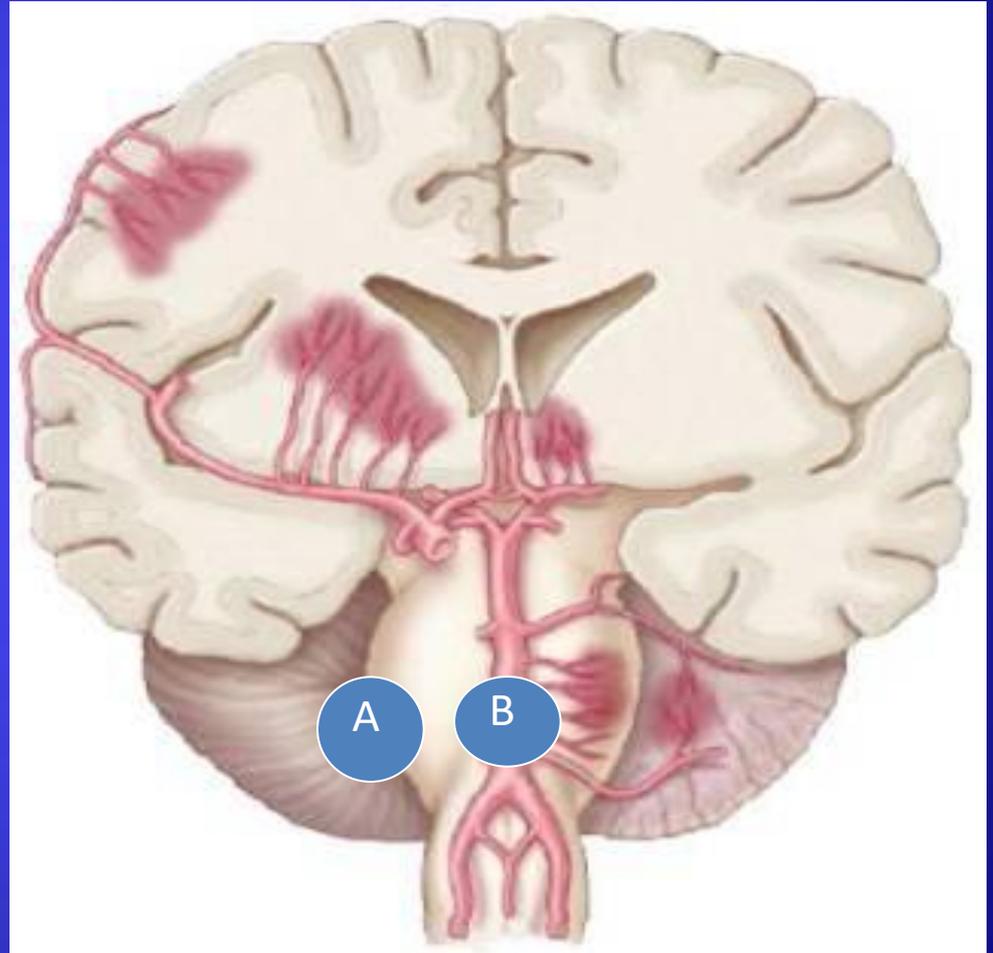
Infratentorial



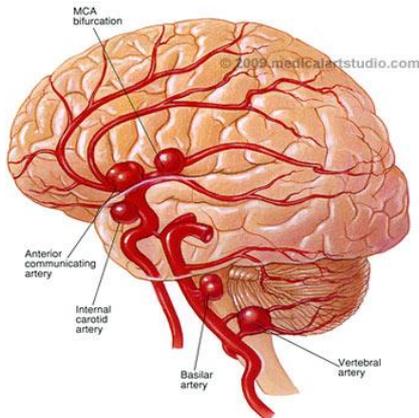
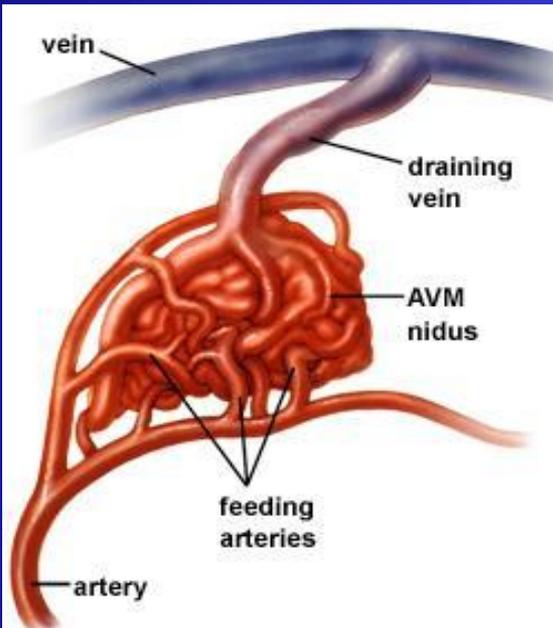
A



B

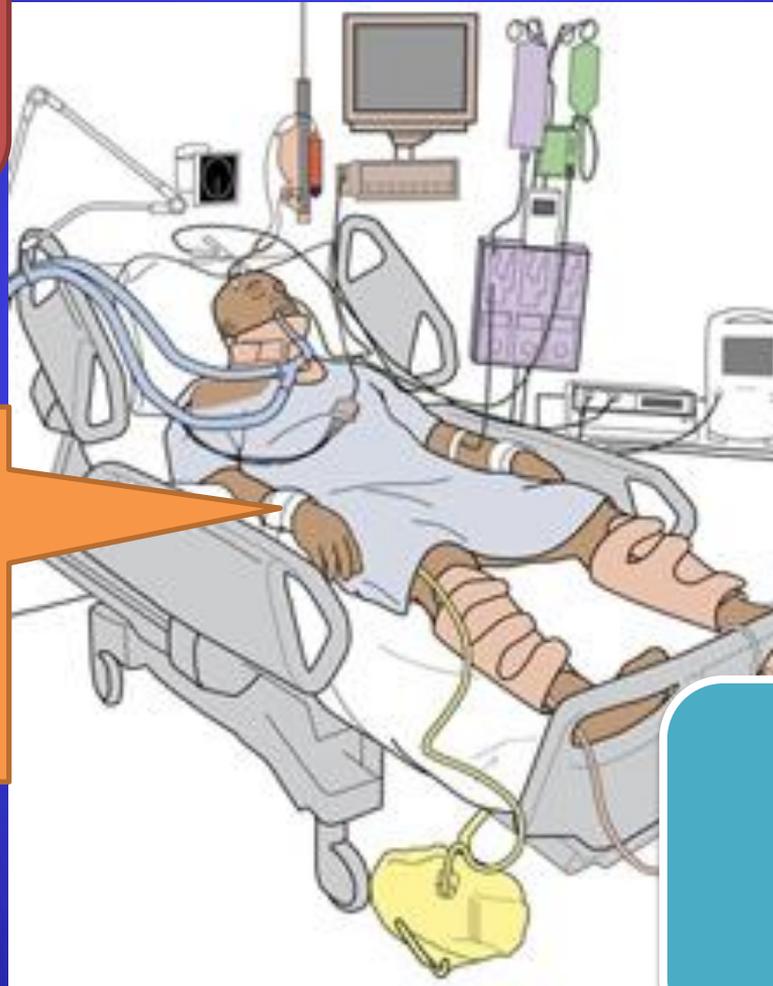


ETIOLOGI BERDASARKAN USIA



- Usia terbanyak dekade 5 – 6
 - > 70 tahun : CAA dan hipertensi
 - > 60 tahun : hipertensi
 - 45 – 60 tahun : hipertensi dan aneurisma
 - < 45 tahun : ruptur AVM, hipertensi, apoplexy
- ♂ > ♀

Neurological function :
GCS
Pupil
Hemiparesis
Brainstem reflex



Respiratory function :
Saturasi O₂
AGD

Pemeriksaan darah :
Elektrolit, glukosa,
ureum, kreatinin,
osmolaritas, HB, Hmt,
koagulasi, Laktat

Cardiovascular function :
Nadi, tekanan darah,
EKG, CVP

Radiologis :
Foto Paru
CT Scan kepala

Gejala

- **Susah komunikasi**
- **Kelemahan anggota gerak**
- **Kesulitan melihat tiba-tiba**
- **Nyeri kepala hebat**
- **Susah berjalan**

- Defisit neurologis pada stroke dapat bermanifestasi menjadi berbagai gejala klinis sesuai dengan lokasinya.

Face
Does the face look uneven?
Ask the person to smile.

Arm
Does one arm drift down?
Ask the person to raise both arms.

Speech
Does their speech sound strange?
Ask the person to repeat a simple phrase, for example, "The sky is blue."

Time
If you observe any of these signs, then it's time to call 9-1-1.

Learn these signs of stroke.

Be a hero. Save a life.

Call 9-1-1

NSMC
NORTH SHORE MEDICAL CENTER
A Primary Stroke Service of the Department of Public Health
nsmcstroke@partners.org

Massachusetts Department of Public Health — For more information call 1-800-485-1119 or email heart.ondemand@state.ma.us

IF YOUR PATIENT HAD A STROKE, WOULD YOU KNOW WHAT TO LOOK FOR?

DIFFICULTY WITH MOTOR ACTIVITY, BLADDER CONTROL, SOCIAL BEHAVIOUR AND PERSONALITY

frontal lobe

parietal lobe
DIFFICULTY WITH READING, WRITING, MATH CALCULATION, DISTINGUISHING RIGHT FROM LEFT

occipital lobe
VISUAL DISTURBANCES

cerebellum
SLURRED SPEECH, "WOBBLY" WALK, SHAKY HANDS

medulla oblongata

pons

temporal lobe
DIFFICULTY WITH MEMORY, HEARING AND SPOKEN LANGUAGE

Wernicke's area
SPEECH COMPREHENSION- DIFFICULTY UNDERSTANDING WHEN SPOKEN TO

Broca's area
SPEECH PRODUCTION- DIFFICULTY EXPRESSING WORDS

al

B

Balance



B is for Balance:
Does the person have a sudden loss of balance?

E

Eyes



E is for Eye:
Has the person lost vision in one or both eyes?

F

Face



F is for Face:
Does the person's face look uneven?

A

Arms



A is for Arm:
Is one arm hanging down?

S

Speech



S is for Speech:
Is the person's speech slurred?
Does the person have trouble speaking or seem confused?

T

Time



T is for Time:
Call 911 now!

OPERASI vs KONSERVATIF

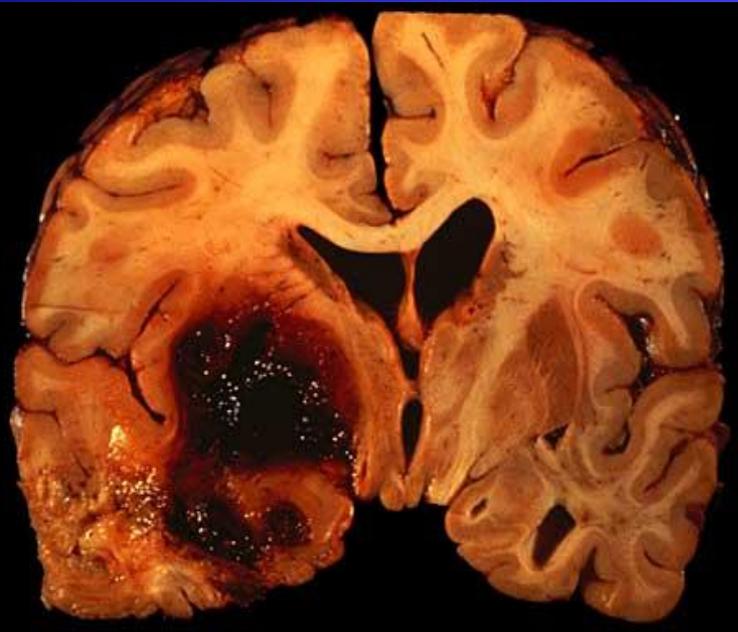


- *Kanaya, et al.* : operasi sangat membantu, kecuali pada kondisi neurologis yang baik / buruk sekali
- *Mizukami, et al.* : operasi hanya untuk pasien *moderately impaired*
- *Kanno, et al.* : operasi pada kondisi moderat dan berat → perbaikan klinis
- *Batjer, et al* : operasi pada perdarahan putaminal tidak berguna
- *Kamaya et al.* dan *Juvela et al.* : operasi berguna pada GCS 7-10



Penyebab

- Hipertensi
- AVM
- Koagulopati
- Perdarahan tumor
- Amyloid angiopathy
- Infark berdarah
- Reaksi obat.



PENATALAKSANAAN

Konservatif

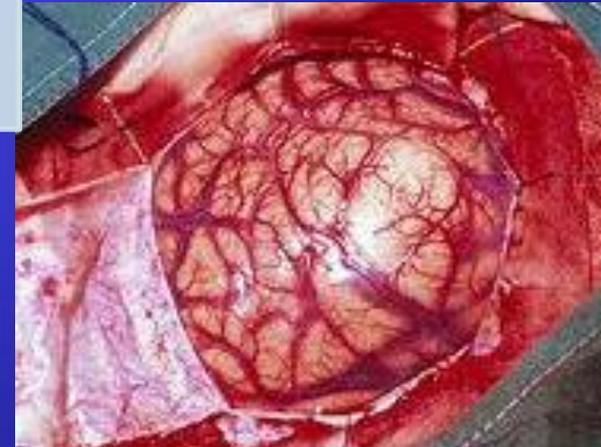
Perbaikan
keadaan
umum

Medika
mentosa

Operatif

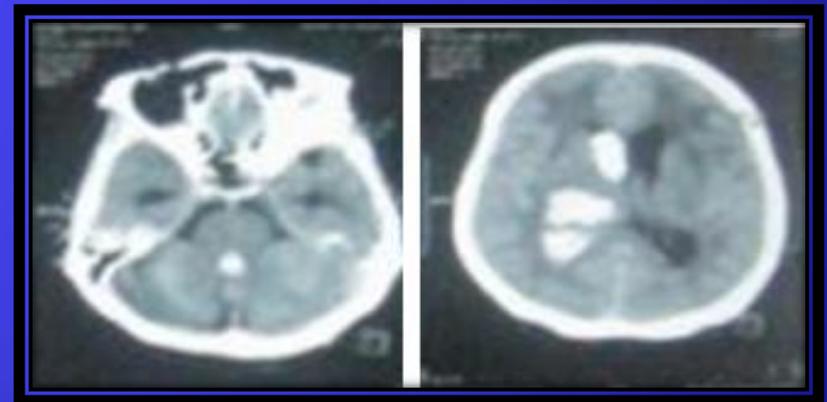
Open
surgery

Endovascular

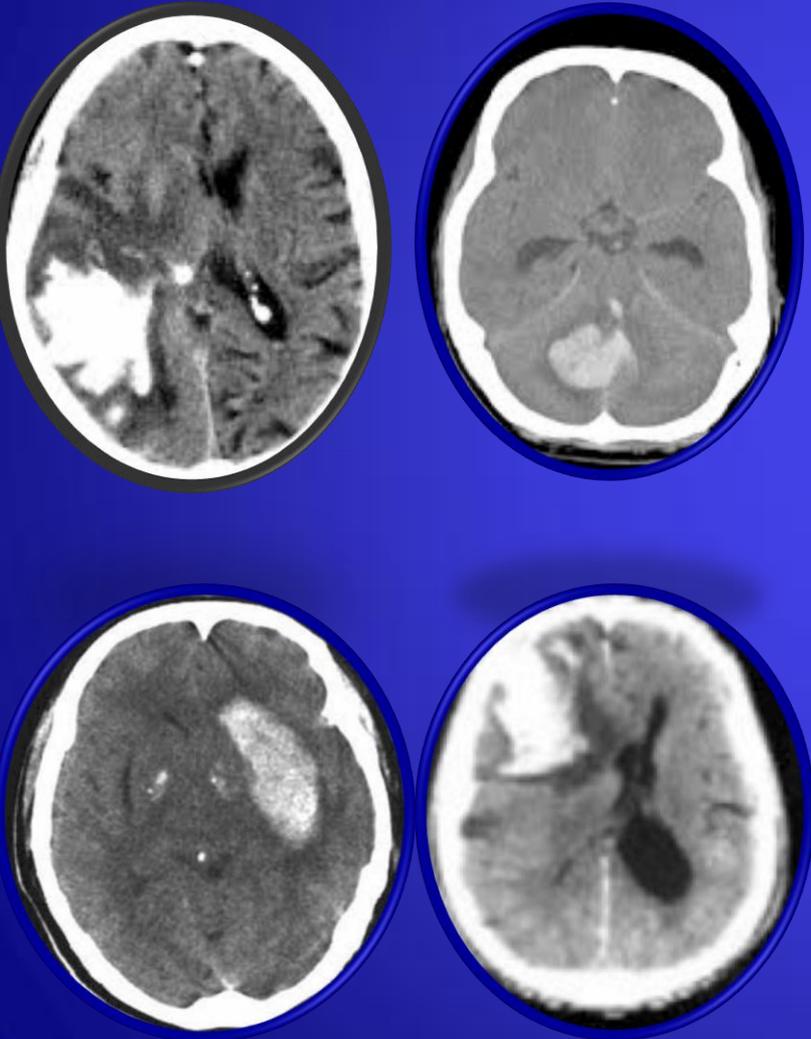


ICH

- Surgical Trial of Intracerebral Haemorrhage:
- GCS 9-12 → good outcome
- Lokasi 1 cm dari kortikal → good outcome
- GCS ≤ 8 , lokasi ≥ 1 cm → outcome jelek
- Volume > 30 cm, lokasi 1 cm dari permukaan → saran evakuasi (class IIb, level B)
- Jika indikasi kontroversial → minimal invasif
 - Meningkatkan clot removal
 - Menurunkan kematian.

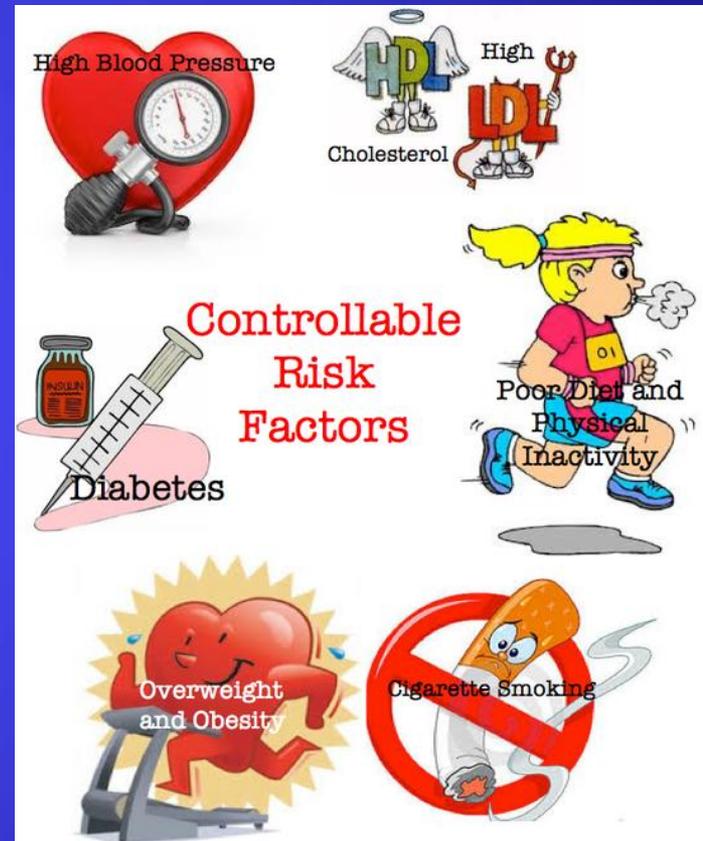


INDIKASI OPERASI



- Lesi dengan efek massa yang hebat → herniasi
- Volume :
 - Lobar 10 - 60 cc
- Kegagalan penanganan konservatif → TTIK
- Lokasi yang superficial pada hemisfer nondominan
- Usia < 50 tahun
- STICH → Operasi efektif pada lokasi perdarahan lobar. Perdarahan *deep cerebral* tidak memberikan manfaat dengan tindakan operasi (2003)

Faktor resiko



Common complications after acute stroke

- Falls	25%
- UTI	24%
- Chest infection	22%
- Pressure sore	21%
- Depression	16%
- Shoulder pain	9%
- DVT	2%
- Pulmonary embolism	1%

Data derived from Langhorne P,Stott DJ,Robertson L, et al.Medical complications after stroke; a multicenter study.Stroke2000;31 ;1223-1229

Data from a prospective multicentered study with patients followed up to 30 months.Of those patients,89 percent had ischemic strokes and 11 percent had primary intracerebral hemorrhage

Terima Kasih