Pencegahan Stroke Berulang

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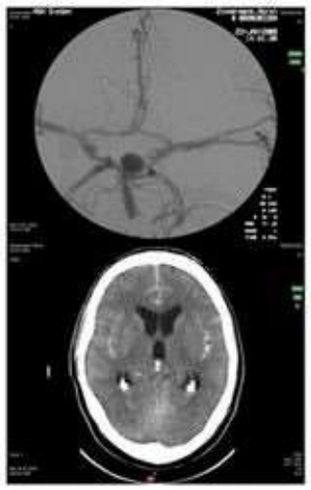
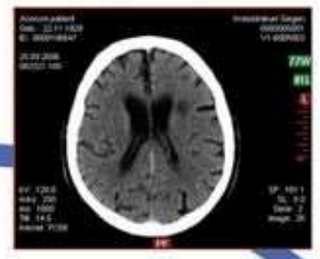
Stroke

- Penyebab kecacatan dan kematian utama
- "Satu diantara enam"
- 15-25% berulang dalam 90 hari pasca serangan
- Risiko tertinggi dalam 48 jam pertama

Stroke Subtypes

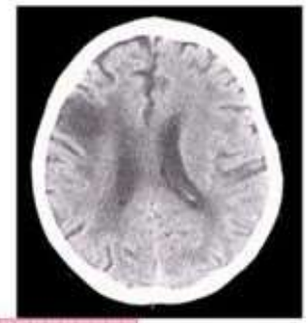


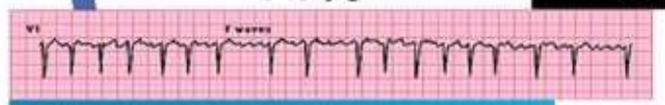
Small vessel
Lacunar
19%



Large vessel
6%

Cardio-embolic
14%



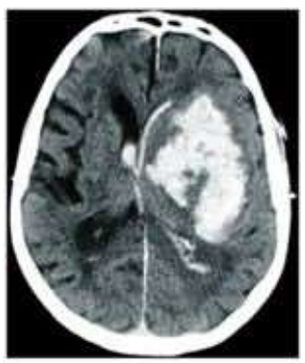


Ischemia 71%

SAH
13%

Haemorrhage 26%

ICH
13%



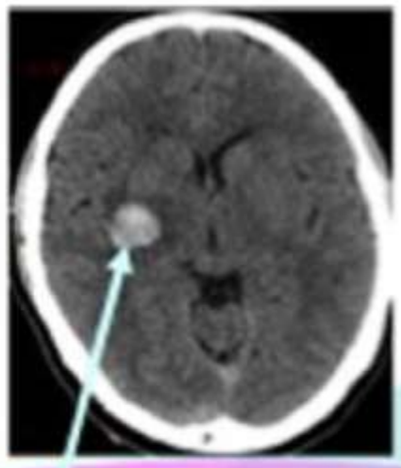
Others 3%

Unknown etiology
32%

NINCDS Stroke Data Bank: Foulkes, et al. Stroke 1988;19:547.

Stroke

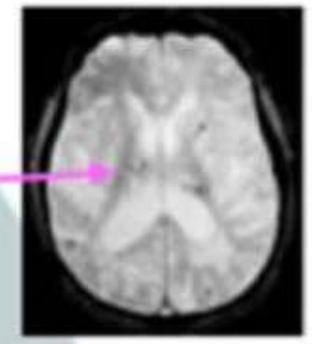
‘Silent’ SVD



Haemorrhagic

ICH
(5-?%)

Microbleeds
(0-40%)



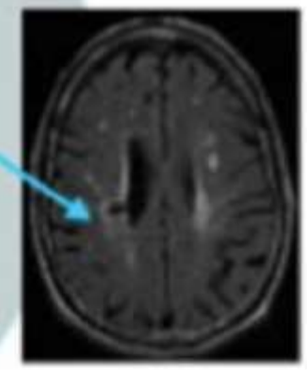
LACI

IS-CE

Ischemic

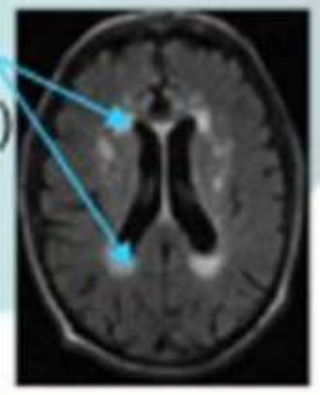
IS-LACI
(85+%)

Lacunes
(0-50%)



IS-LAD

WMH
(0-100%)

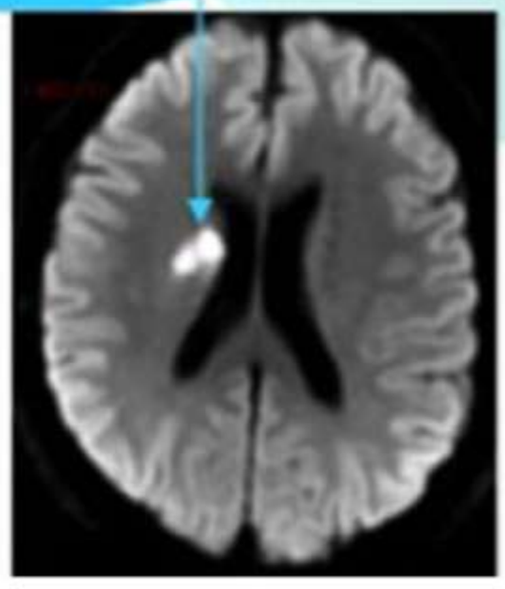


Dementia (20-40%)

Cognitive impairment

Depression (10-?%)

Focal neurological deficit (100%)



Dementia (20-?%)

Incontinence (20-?%)

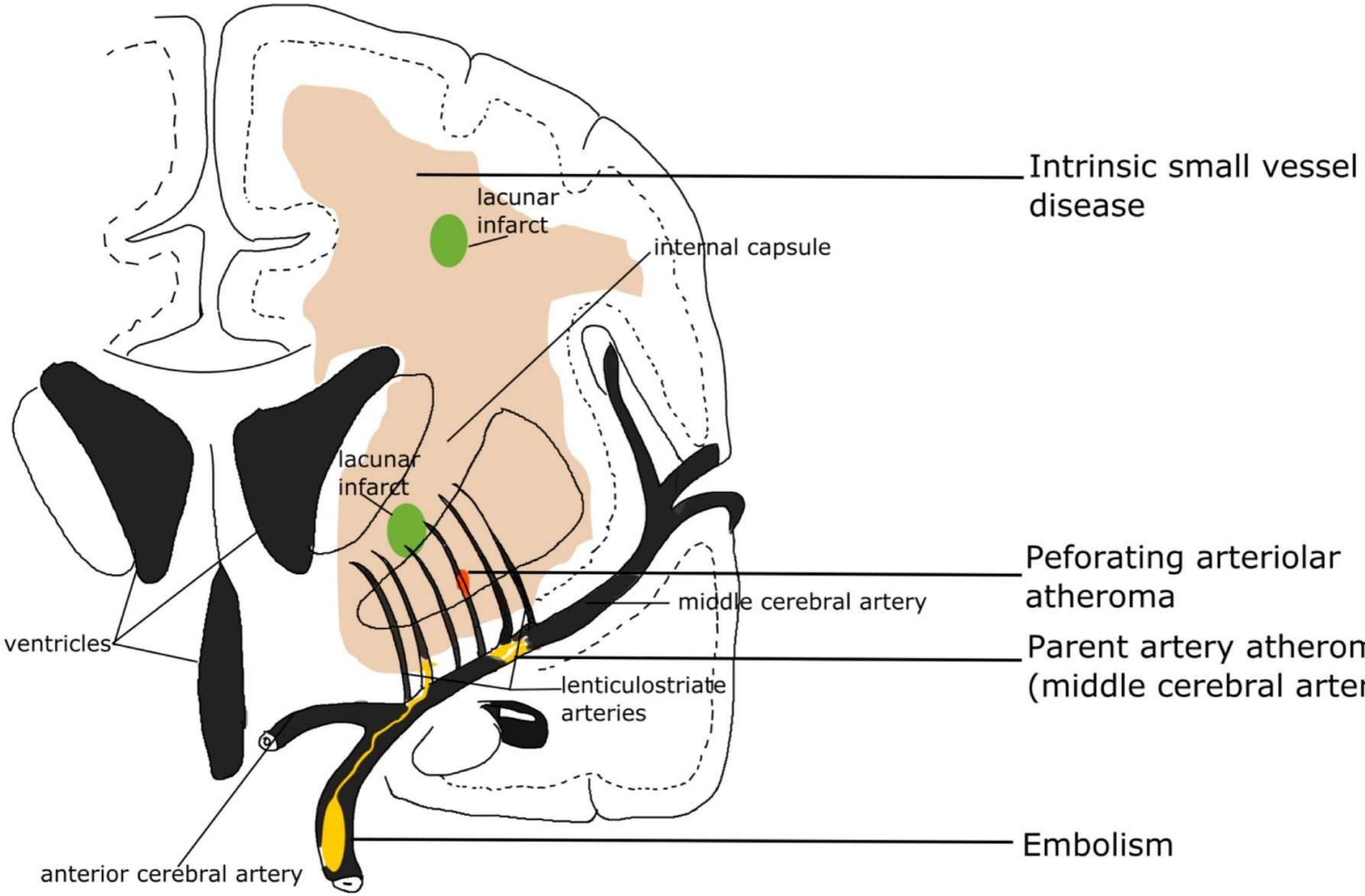
Gait disturbance (30+%)

Cognitive impairment (30+%)

Depression (20%)

Large vessel, small vessel, dan

kardioembolik



Guidelines

Canadian Stroke Best Practice Recommendations: secondary prevention of stroke guidelines, update 2014

Shelagh B. Coutts[1], Theodore H. Wein[2], M. Patrice Lindsay[3]*, Brian Buck[4], Robert Cote[5], Paul Ellis[6], Norine Foley[7], Michael D. Hill[1], Sharon Jaspers[8], Albert Y. Jin[9], Brenda Kwiatkowski[10], Carolyn MacPhail[11], Dana McNamara-Morse[12], Michael S. McMurtry[13], Tania Mysak[14], Andrew Pipe[15], Karen Silver[16], Eric E. Smith[1], Gord Gubitz[17], and on behalf of the Heart, and Stroke Foundation Canada Canadian Stroke Best Practices Advisory Committee

GUIDELINE

South African guideline for management of ischaemic stroke and transient ischaemic attack 2010: A guideline from the South African Stroke Society (SASS) and the SASS Writing Committee

A Bryer, M D Connor, P Haug, B Cheyip, H Staub, B Tipping, W Duim, V Pinkney-Atkinson

AHA/ASA Guideline

Guidelines for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack

A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association

The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists.

Endorsed by the American Association of Neurological Surgeons and Congress of Neurological Surgeons

Acuan

PANDUAN PRAKTIK KLINIS NEUROLOGI

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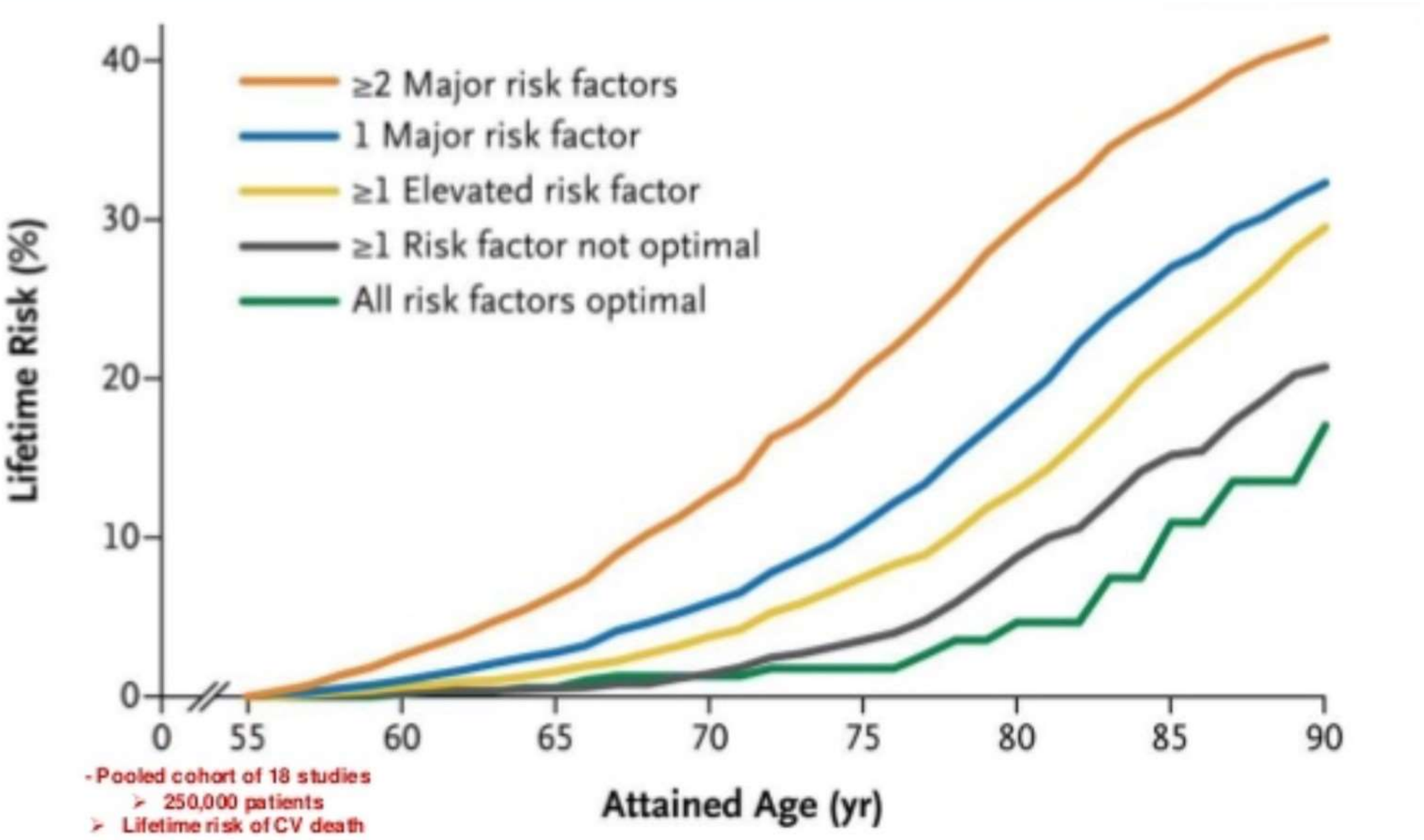
PERHIMPUNAN DOKTER SPESIALIS SARAF INDONESIA

2016

Pencegahan stroke berulang dengan mengendalikan faktor risiko



Secondary Prevention

Factors Treatment	Recommendations	Level of evidence	Grade
Antiplatelets **Single agent**			
Aspirin *Alternatives:*	The recommended dose of aspirin is 75mg to 325mg daily.	I	A
Clopidogrel	The recommended dose is 75mg daily. or	I	A
Ticlopidine	The recommended dose is 250mg twice a day.	I	A
Trifusal	The recommended dose is 600mg daily. (new recommendation)	I	A
Cilostazol	The recommended dose is 100mg twice a day. (new recommendation)	I	A

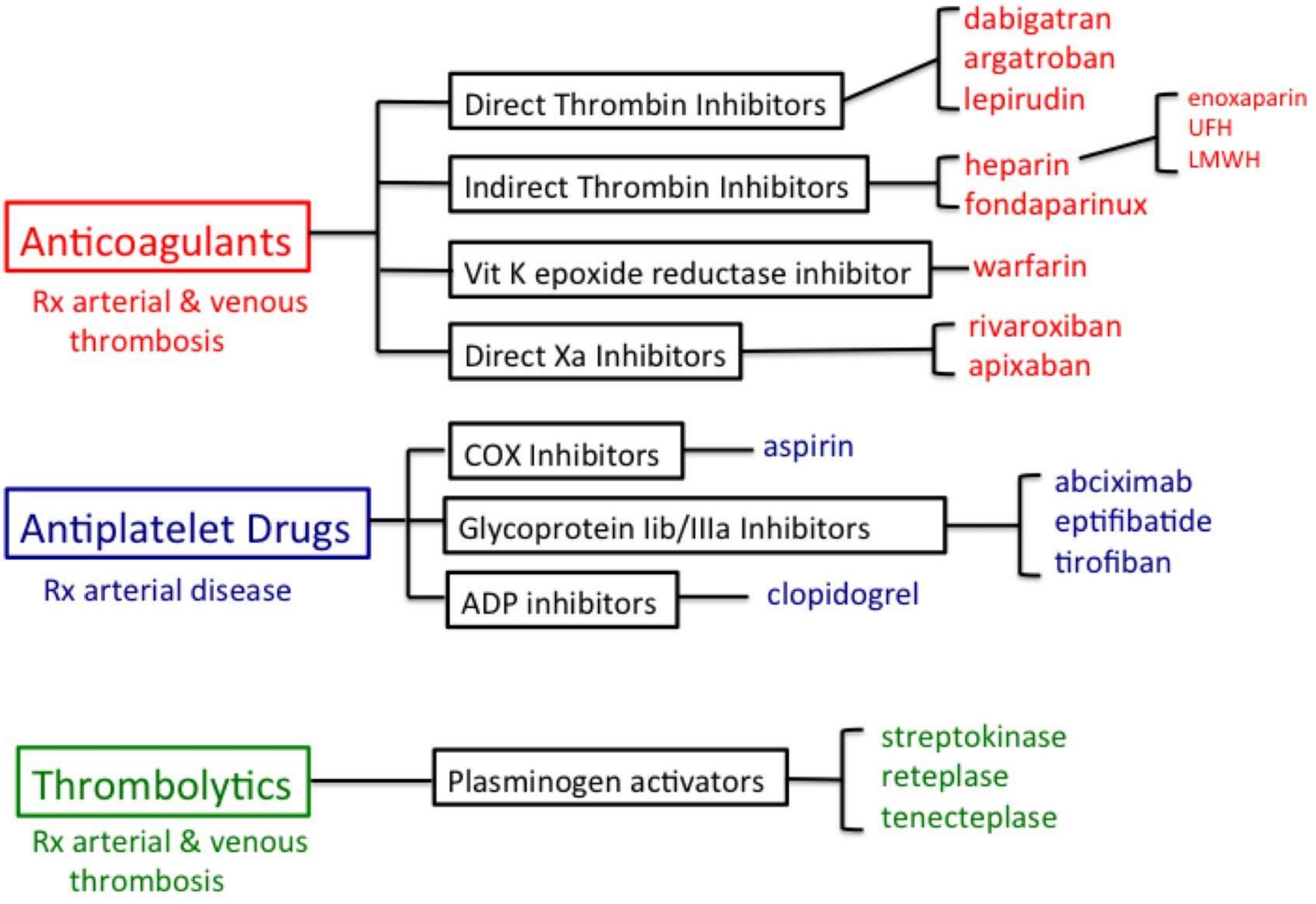
Pencegahan stroke berulang

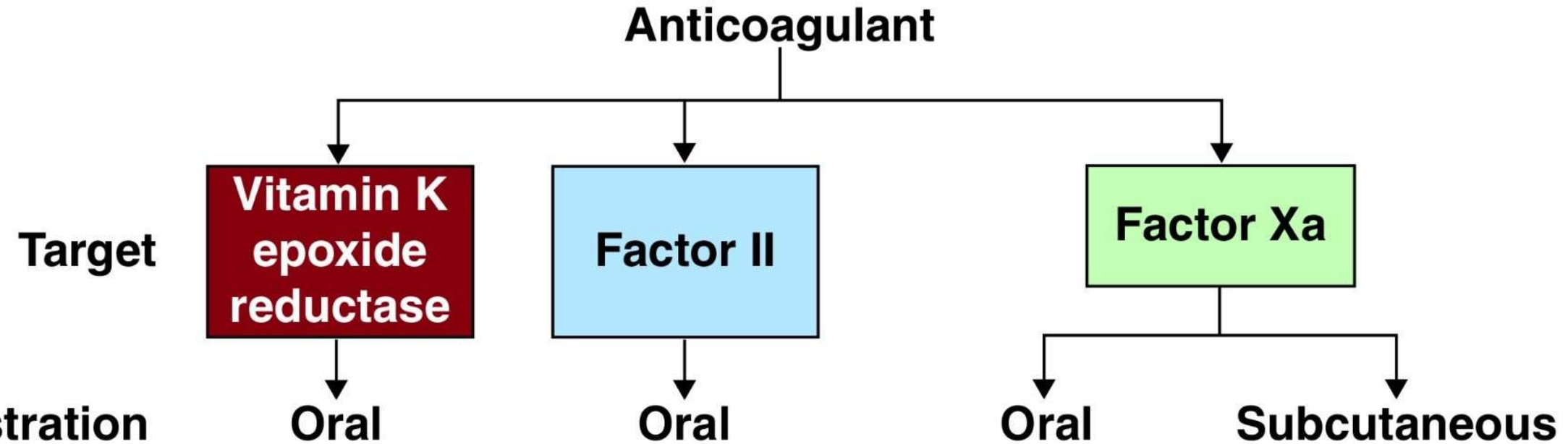
Double Therapy	Combination therapy of clopidogrel and aspirin is not superior to clopidogrel or aspirin alone; but with higher bleeding complication. (new recommendation)	I	A
Anti-hypertensive treatment	ACE-inhibitor based therapy should be used to reduce recurrent stroke in normotensive and hypertensive patients. ARB-based therapy may benefit selected high risk populations.	I II-1	A B
Lipid lowering	Lipid reduction should be considered in all subjects with previous ischaemic strokes.	I	A
Glycaemic control	All diabetic patients with a previous stroke should have good glycaemic control.	III	C
Cigarette smoking	All smokers should stop smoking	III	C

- Pengendalian faktor risiko stroke

- Antiplatelet untuk stroke trombotik
- Anti kooagulan untuk stroke kardioembolik
- Statin untuk semua kasus stroke iskemik
- Pengendalian tekanan darah dan gula darah optimal
- Isu khusus: sleep apnea, sindroma metabolik, migren, dan kontrasepsi

Drugs Used to Treat Clotting Disorders





Anticoagulants			
Established.....Warfarin			
New .....Tecarfarin[a]	Ximelagatran[b]	Apixaban	Idraparinux
	Dabigatran etexilate	Rivaroxaban	Idrabiotaparinux
	AZD-0837	Edoxaban	
		Betrixaban	
		YM150	

SCH530348
E5555

Thrombin

ADP

Ticlopidine
Clopidogrel
Prasugrel
Ticagrelor
Elinogrel

P2Y12

PAR-1

Gi

Gg

G12

Endothelial Cell

NO

PGI2

Phospholipid Release

PI3K

Rap1b/Akt

Gs

PGI2 Receptor

AA

Aspirin

COX-1

Intracellular Signaling

AC/GC

ATP/GTP

↑cAMP/cGMP

Gs

↑ Adenosine

A2a Receptor

- Active Uptake

PDE

PKA

VASP

VASP-P

AMP/GMP

TxA2

Cilostazol
Dipyridamole

Tx A2 Receptor

GPIIb/IIIa Activation
Platelet Aggregation

Thromboembolism

Therapeutic window

*Hemorrhage

Clinical events

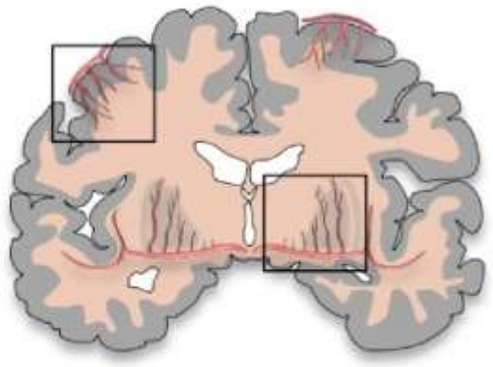
0 1 2 3 4 5

Intensity of anticoagulation (INR)

* Increased rates in the elderly

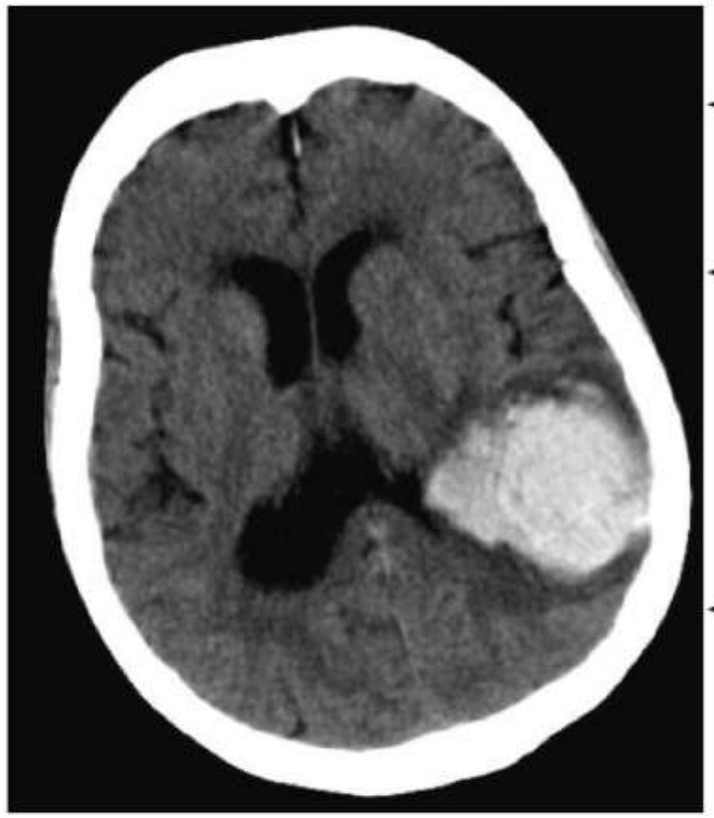
↑ Sensitivity

INR variability ↑



Bleeding-prone microarteriopathies

Genetic and ethnic factors



Chronic vascular risk factors (e.g. smoking, hypertension)

Acute precipitants (e.g. hypertension, "stress")

Antithrombotic drug treatment

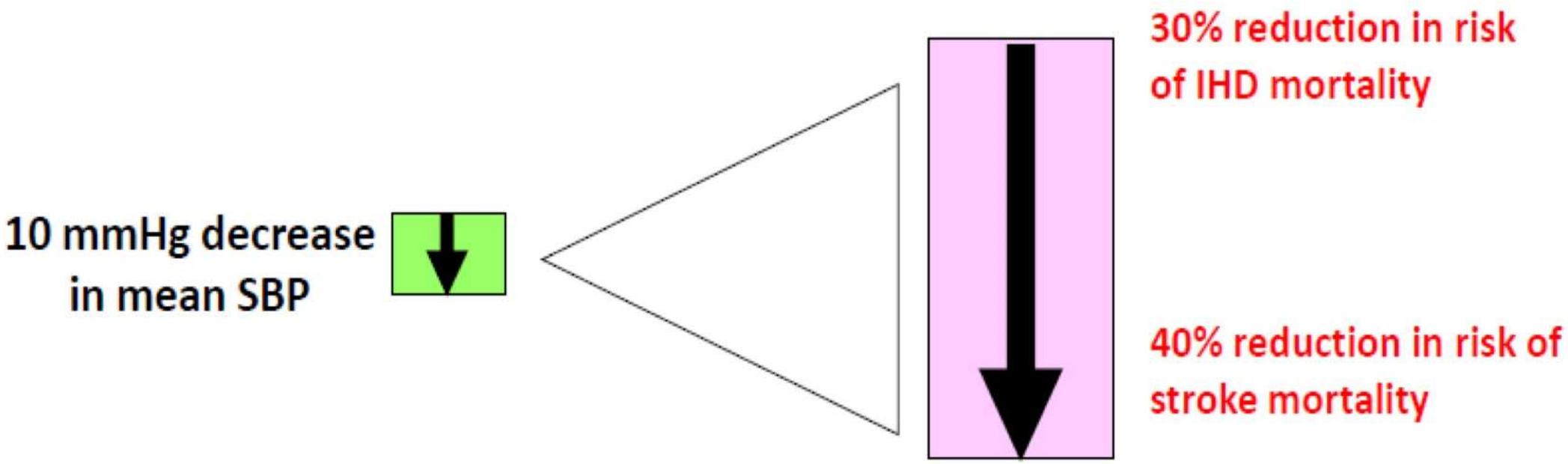
Anti platelet dan anti koagulan

- Pilihan utama aspirin dan clopidogrel
- Pada kasus tertentu cilostazol
- Tidak ada bukti konklusif terapi kombinasi jangka panjang
- Bila AF, warfarin yang memerlukan monitor INR

Penurunan tekanan darah menurunkan risiko kardiovaskuler

Δ BP 10 mmHg are Associated with > 40% Effect on CV Risk

- Meta-analysis of 61 prospective, observational studies
- 1 million adults
- 12.7 million person-years



Lewington S et al. *Lancet.* 2002;360:1903–1913.

Perubahan pola hidup adalah wajib selain obat

- Batasi konsumsi garam
- Olahraga
- Kurangi berat badan
- Berhenti merokok
- Konsumsi buah dan sayur

Table 15 Drugs to be preferred in specific conditions

Condition	Drug
Asymptomatic organ damage	
LVH	ACE inhibitor, calcium antagonist, ARB
Asymptomatic atherosclerosis	Calcium antagonist, ACE inhibitor
Microalbuminuria	ACE inhibitor, ARB
Renal dysfunction	ACE inhibitor, ARB
Clinical CV event	
Previous stroke	Any agent effectively lowering BP
Previous myocardial infarction	BB, ACE inhibitor, ARB
Angina pectoris	BB, calcium antagonist
Heart failure	Diuretic, BB, ACE inhibitor, ARB, mineralocorticoid receptor antagonists
Aortic aneurysm	BB
Atrial fibrillation, prevention	Consider ARB, ACE inhibitor, BB or mineralocorticoid receptor antagonist
Atrial fibrillation, ventricular rate control	BB, non-dihydropyridine calcium antagonist
ESRD/proteinuria	ACE inhibitor, ARB
Peripheral artery disease	ACE inhibitor, calcium antagonist
Other	
ISH (elderly)	Diuretic, calcium antagonist
Metabolic syndrome	ACE inhibitor, ARB, calcium antagonist
Diabetes mellitus	ACE inhibitor, ARB
Pregnancy	Methyldopa, BB, calcium antagonist
Blacks	Diuretic, calcium antagonist

BP Target based on Population and Guidelines

Guideline	Population	Target TD (mmHg)
JNC 8 (2013)	Age ≥ 60 years	<150/90
	Age < 60 years	<140/90
	Diabetes	<140/90
	CKD	<140/90
ESH-ESC 2013	Not elderly	<140/90
	Age <80 years	<150/90
	Age ≥ 80 years	<150/90
	Diabetes	<140/85
	CKD, proteinuria (-)	<140/90
	CKD, proteinuria (+)	<130/90
CHEP 2013	Age <80 years	<140/90
	Age ≥80 years	<150/90
	Diabetes	<130/80
	CKD	<140/90

TD: Tekanan Darah

JNC 8. JAMA 2014:311(5):507-520; ESH-ESC 2013. **European Heart Journal (2013) 34, 2159–2219;** ***The 2013 CHEP Recommendation***

Table 2. Guidelines for initial combination therapy.

Committee	BP levels requiring initial combination therapy
JNC-7[6]	Stage 2 (≥160/100 mmHg) SBP > 20 mmHg or DBP > 10 mmHg above the goal
NKF[53]	SBP > 20 mmHg above the goal according to the stage of CKD and CVD risk
ADA[54]	BP > 130/80 mmHg and type II diabetes
ESH[55]	High risk patients according to total CVD risk

JNC-7, Seventh Report of the Joint National Committee on prevention, detection, evaluation, and treatment of High Blood Pressure.
Abbreviations: SBP, systolic blood pressure; DBP, diastolic blood pressure; NKF, National Kidney Foundation; ADA, American Diabetes Association; ESH, European Society of Hypertension.

Kombinasi yang mana?

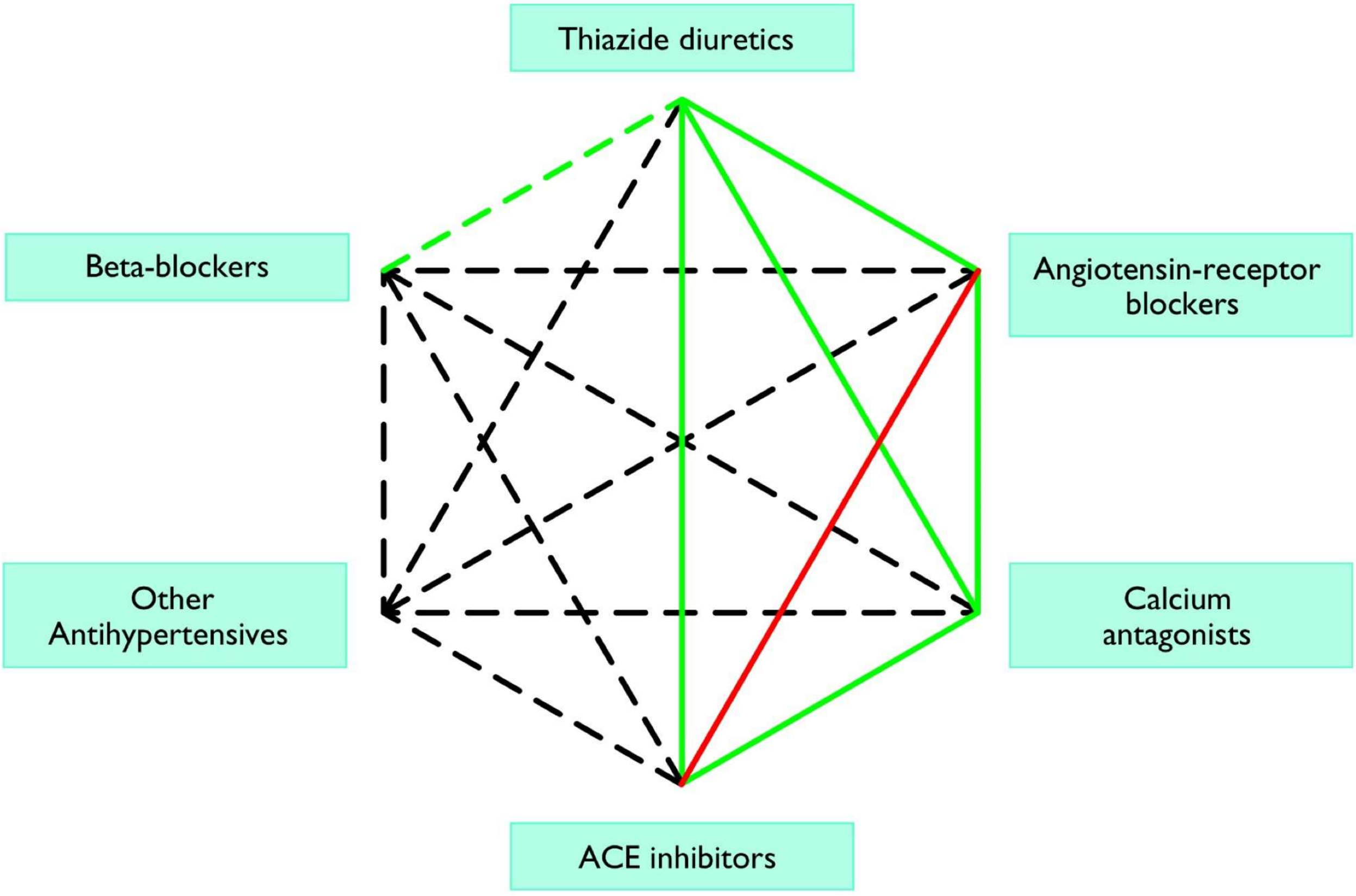


Table 33 Recommendations for lipid-lowering drugs for primary and secondary prevention of stroke

Recommendations	Class [a]	Level [b]	Ref [c]
Statin therapy to reach established treatment goals is recommended in patients at high or very high CV risk for primary prevention of stroke.	I	A	64, 65, 422, 426
Lipid-lowering therapy is recommended in patients with other manifestations of CVD for primary prevention of stroke.	I	A	63–65, 422, 426
Intensive statin therapy is recommended in patients with a history of non-cardioembolic ischaemic stroke or TIA for secondary prevention of stroke	I	A	422, 428

Table 5. High- Moderate- and Low-Intensity Statin Therapy (Used in the RCTs reviewed by the Expert Panel)*

High-Intensity Statin Therapy	Moderate-Intensity Statin Therapy	Low-Intensity Statin Therapy
Daily dose lowers LDL–C on average, by approximately ≥50%	Daily dose lowers LDL–C on average, by approximately 30% to <50%	Daily dose lowers LDL–C on average, by <30%
Atorvastatin (40†)–80 mg **Rosuvastatin 20** *(40)* **mg**	**Atorvastatin 10** *(20)* **mg** **Rosuvastatin** (*5*) **10 mg** **Simvastatin 20–40 mg‡** **Pravastatin 40** *(80)* **mg** **Lovastatin 40 mg** *Fluvastatin XL 80 mg* **Fluvastatin 40 mg bid** *Pitavastatin 2–4 mg*	*Simvastatin 10 mg* **Pravastatin 10–20 mg** **Lovastatin 20 mg** *Fluvastatin 20–40 mg* *Pitavastatin 1 mg*

Specific statins and doses are noted in bold that were evaluated in RCTs (17,18,46-48,64-67,69-78) included in CQ1, CQ2 and the CTT 2010 meta-analysis included in CQ3 (20). All of these RCTs demonstrated a reduction in major cardiovascular events. Statins and doses that are approved by the U.S. FDA but were not tested in the RCTs reviewed are listed in *italics*.

*Individual responses to statin therapy varied in the RCTs and should be expected to vary in clinical practice. There might be a biologic basis for a less-than-average response.

†Evidence from 1 RCT only: down-titration if unable to tolerate atorvastatin 80 mg in IDEAL (47).

‡Although simvastatin 80 mg was evaluated in RCTs, initiation of simvastatin 80 mg or titration to 80 mg is not recommended by the FDA due to the increased risk of myopathy, including rhabdomyolysis.

bid indicates twice daily; FDA, Food and Drug Administration; IDEAL, Incremental Decrease through Aggressive Lipid Lowering study; LDL–C, low-density lipoprotein cholesterol; and RCTs, randomized controlled trials.

ALIR PENGELOLAAN RUJUKAN

Pasien Baru Dengan Diagnosa Stroke

Dokter di FKTP melakukan resusitasi kardiopulmonal berupa oksigen 2 liter/menit dan cairan kristaloid/koloid, kemudian segera merujuk pasien ke FKRTL (diutamakan yang memiliki dokter spesialis saraf) untuk mendapatkan penanganan selanjutnya

MODIFIKASI GAYA HIDUP
- Diet kaya buah-buahan, sayuran, rendah garam dan lemak/*low fat dairy product*
- Latihan fisik
- Tidak merokok dan tidak mengkonsumsi alkohol

MENGONTROL FAKTOR RISIKO
- Tekanan darah
- Gula darah
- Kolesterol, Trigliserida
- Sindrom metabolik
- Jantung
- Homosistein

OBAT& REHABILITASI
- Stroke iskemik: antiplatelet
- Stroke dengan atrial fibrilasi atau dengan kelainan jantung organik: anti koagulan
- Rehabilitasi

KONSELING & EDUKASI
- Mengedukasi keluarga mencegah serangan kedua
- Mengawasi agar insan peyandang stroke teratur minum obat
- Mengendalikan faktor risiko

EVALUASI MEDIS BERKALA
- Konsul dr Sp saraf
- Laboratorium: Hematologi rutin, INR/ Trombo tes, GDP & G2PP, Kolesterol total, LDL, HDL, Trigliserida,Ureum & kreatinin,
- EKG, TCD & Doppler Carotis

IDENTIFIKASI KOMPLIKASI
- Komplikasi Akut Yang Mengancam Jiwa : Serangan stroke pertama atau serangan stroke berulang
- Komplikasi kronik dan komorbid: Atrial Fibrilasi, Bronkopneumonia, *Stress Ulcer*, Ulkus Dekubitus, Trombosis Vena Dalam, Disfagia, Depresi

PEMANTAUAN Tekanan Darah, Diet, IMT dan latihan fisik, tanda dan gejala Stroke

Kondisi insan penyandang stroke stabil → Lanjutkan pengelolaan di FKTP

Stroke dengan penyulit atau komorbid → Lakukan rujukan *urgent* ke FKRTL

Bila Kondisi Pasien Stabil Selama Pengelolaan di FKTP → Lakukan rujukan rutin ke FKRTL sesuai dengan jadwal

Bila selama pengelolaan di FKTP ada komplikasi atau komobid → Lakukan rujukan *urgent / emergency* ke FKRTL

ALIR RUJUKAN RUTIN

Insan penyandang stroke memiliki faktor risiko untuk mengalami stroke ulang

Untuk itu perlu dilakukan **Rujukan Rutin** dari FKTP Ke FKRTL

Penilaian hasil pengobatan dan rehabilitasi serta pengendalian faktor risiko

Pengelolaan di FKRTL

- Konsultasi ke dokter spesialis saraf
- Pemeriksaan penunjang: Hematologi rutin (Hemoglobin, leukosit dan hitung jenis, hematokrit, trombosit, LED), GDP&G2PP, Kolesterol total, kolesterol LDL, Kolesterol HDL, Trigliserida, Ureum & kreatinin
- Pemeriksaan EKG, INR, Doppler carotid, Rehabilitasi

Tidak ada kelainan

Bila ada kelainan dikelola di FKRTL sampai stabil dan tidak ada titrasi obat

Rujuk Balik dari FKRTL ke FKTP

KRITERIA RUJUKAN RUTIN

Kriteria rujukan rutin	Jenis pemeriksaan	Waktu	Pengelolaan di FKRTL	Kriteria Rujuk Balik
Insan pasca stroke yang memiliki faktor risiko untuk mengalami stroke ulang bila tidak dikendalikan dengan baik	Konsultasi ke dokter spesialis saraf	• Awal diagnosis • Untuk stroke stabil setahun sekali	Dilakukan pemeriksaan oleh dokter spesialis saraf	• Segera dirujuk balik bila tidak ada kelainan • Bila ada kelainan, rujuk balik ditentukan oleh dokter spesialis yang berkompeten berdasar berat ringannya kelainan/perubahan patologis yang terjadi
	Pemeriksaan penunjang: • Hematologi rutin (Hb, Ht, Leu, Tr, ht. jenis, LED) • INR/Trombo tes • GDP dan G2PP • Kolesterol total, LDL, HDL, Trigliserida • Ureum dan kreatinin	• Awal diagnosis • 6 bulan sekali • INR setiap bulan	Dilakukan pemeriksaan laboratorium	
	EKG	Jika tidak ada kondisi khusus dapat dilakukan setiap 1 tahun	Dilakukan pemeriksaan EKG	Tidak ada kelainan atau perubahan EKG yang memerlukan evaluasi lanjut
Kriteria rujukan rutin	Jenis pemeriksaan	Waktu	Pengelolaan di FKRTL	Kriteria Rujuk Balik
	INR	Setiap bulan	Dilakukan pemeriksaan INR	Tidak ada kelainan
	Doppler karotis dan TCD	Setiap 6 bulan	Dilakukan pemeriksaan TCD/ carotid duplek	Tidak ada kelainan
	Rehabilitasi	Sesuai kebutuhan	Dilakukan rehabilitasi sesuai kebutuhan pasien	Bila keadaan sudah stabil dan tidak ada modalitas rehabilitasi lebih lanjut atau proses rehabilitasi sudah dapat dilakukan pasien atau keluarga

KRITERIA RUJUKAN *URGENT*

Kriteria Rujukan	Pengelolaan di FKRTL	Kriteria Rujuk Balik
Atrial Fibrilasi Hasil INR tidak sesuai dengan target terapi	Tatalaksana mengacu pada PNPK, PPK di FKRTL, dan/atau pedoman pelayanan yang dikeluarkan organisasi profesi	Target INR sudah tercapai
Bronkopneumonia Panas, batuk berdahak, sesak nafas cepat		• Manifestasi klinis infeksi tidak ada Panas (-), sesak (-), RR normal
Kriteria Rujukan	Pengelolaan di FKRTL	Kriteria Rujuk Balik
Stress Ulcer Nyeri ulu hati, nyeri berkurang dengan makan atau pemberian antasida, nyeri di malam hari, perut rasa penuh, mual, muntah, perdarahan gastrointestinal	Tatalaksana mengacu pada PNPK, PPK di FKRTL, dan/atau pedoman pelayanan yang dikeluarkan organisasi profesi	Perdarahan sudah teratasi, kondisi pasien sudah stabil, benzidin tes (-)
Ulkus Dekubitus Kulit kemerahan, lecet, tampak ada ulkus dangkal, tepi rata atau ulkus dalam menggaung mengenai lemak subkutan, tampak jaringan nekrotik, berbau, perluasan ulkus bisa sampai otot dan tulang		Tanda infeksi akut pada ulkus dekubitus grade 1 dan 2 sudah teratasi
Trombosis Vena Dalam Ada riwayat pembengkakan kedua tungkai jika duduk atau berdiri lama yang diikuti dengan pembengkakan yang tidak berubah dengan tirah baring, rasa tidak nyaman pada betis atau paha terutama saat berdiri dan berjalan		Pengobatan dan hasil laboratorium sudah mencapai target
Disfagia Kesulitan menelan terutama saat minum atau makan makanan cair, menimbulkan batuk atau kesedak saat menelan		Sudah dapat menelan dengan baik atau sudah teratasi dengan menggunakan NGT/ PEG (Percutaneous Endoscopic Gastrostomi)
Kriteria Rujukan	Pengelolaan di FKRTL	Kriteria Rujuk Balik
Depresi Kesedihan, perasaan tertekan, putus asa, kehilangan minat dan kesenangan dalam aktivitas yang biasa dilakukan, insomnia, penurunan aktivitas psikomotor, berkurangnya aktivitas seksual, rendahnya nafsu makan dan kehilangan berat badan, kehilangan energi, kelelahan yang besar, menyalahkan diri sendiri, perasaan tidak berguna dan bersalah, keluhan atau bukti kesulitan konsentrasi, terdapat pikiran untuk bunuh diri yang berulang.	Tatalaksana mengacu pada PNPK, PPK di FKRTL, dan/atau pedoman pelayanan yang dikeluarkan organisasi profesi	Kondisi pasien sudah stabil dengan obat anti depresi
Spastisitas Ekstremitas sulit digerakkan karena kekakuan		
Artrosis Kesulitan menggerakkan sendi karena sakit		

KRITERIA RUJUKAN *EMERGENCY*

Kriteria Rujukan	Pengelolaan di FKRTL	Kriteria Rujuk Balik
Serangan stroke pertama dan atau serangan stroke ulangan • Keluhan mendadak berupa hemidefisit motorik seperti kelumpuhan anggota gerak satu sisi (hemiparesis), kesulitan berbicara, gangguan sensasi rasa pada satu sisi tubuh, penurunan kesadaran, kelumpuhan nervus fasialis dan hipoglosus yang bersifat sentral, gangguan fungsi luhur seperti kesulitan berbahasa (afasia), gangguan fungsi intelektual (demensia), buta separuh lapangan pandang (hemianopia), defisit batang otak sesuai pembuluh darah yang tersumbat.	Tatalaksana mengacu pada PNPK, PPK di FKRTL, dan/atau pedoman pelayanan yang dikeluarkan organisasi profesi	Kondisi pasien sudah stabil dan dalam lanjutan program secondary stroke prevention

Kesimpulan

- Stroke berulang umum terjadi
- Pengendalian faktor risiko sangat penting
- Antiplatelet dan statin untuk kasus stroke iskemik
- Antikoagulan untuk pasien dengan AF
- Pengelolaan optimal di FKTP