

Uudet antitromboottiset hoidot

Suomen Gynekologiyhdistyksen koulutuspäivät
11.11.2010

LT, kardiologian el Pirjo Mustonen, KSKS

Sidonnaisuudet

- Advisor Board –jäsenyys
  - sanofi-aventis
  - Bayer
  - Eli Lilly
  - Leo Pharma
  - GSK
- Luennoitsijana toimiminen
  - käytännössä kaikkien antitromboottisia lääkkeitä markkinoivien yritysten tukemissa tilaisuuksissa
- Osallistuminen ulkomaisiin kongresseihin useiden eri lääkeyritysten kustantamana

Esityksen sisältö

- Uudet antikoagulantit (yleistä tietoa + näkökulmana erityisesti gynekologiset potilaat)

- Uudet verihiutale-estäjät (lyhyesti + näkökulmana gynekologisen potilaan samanaikainen sepelvaltimotauti)

Antitromboottiset lääkkeet

antikoagulantit

varfariini
hepariini
pienimolekyylinen hepariini (LMWH)
- enoksapariini
- dalteparin
- tintsapariini

fondaparinuksi
hirudiini
lepirudiini
danaparoidi
idraparinuksi
dabigatraani (Pradaxa®)
rivaroksabaani (Xarelto®)
abiksabaani

verihiutaleiden estäjät

ASA
dipyridamoli (Asasantin®)
klopidogreeli (Plavix® ym)
prasugreeli (Efient®)
ticagrelori

Uudet antikoagulantit

Uusien antikoagulanttien tyypillinen tutkimus-/lanseerausjärjestys

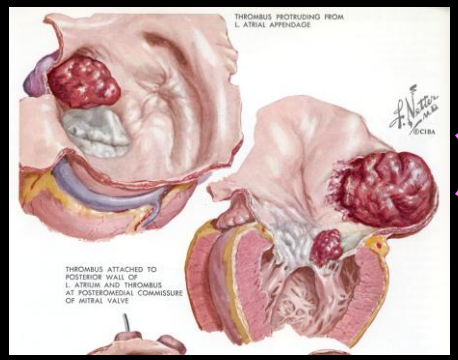


tukosprofylaksi polven ja lonkan tekonivelkirurgiassa

Markkinoilla Suomessa:

Dabigatraani

Rivaroksabaani

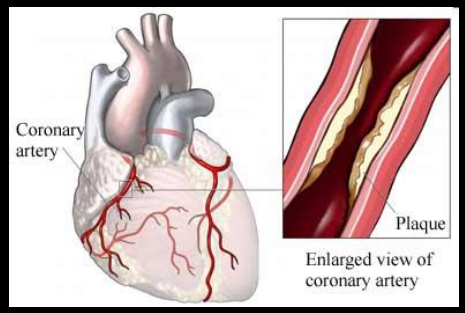


eteisvärinään liittyvän aivohalvauksen esto

Suuret faasi III:n tutkimukset: valmistunut (dabigatraani) / valmistumassa (rivaroksabaani)

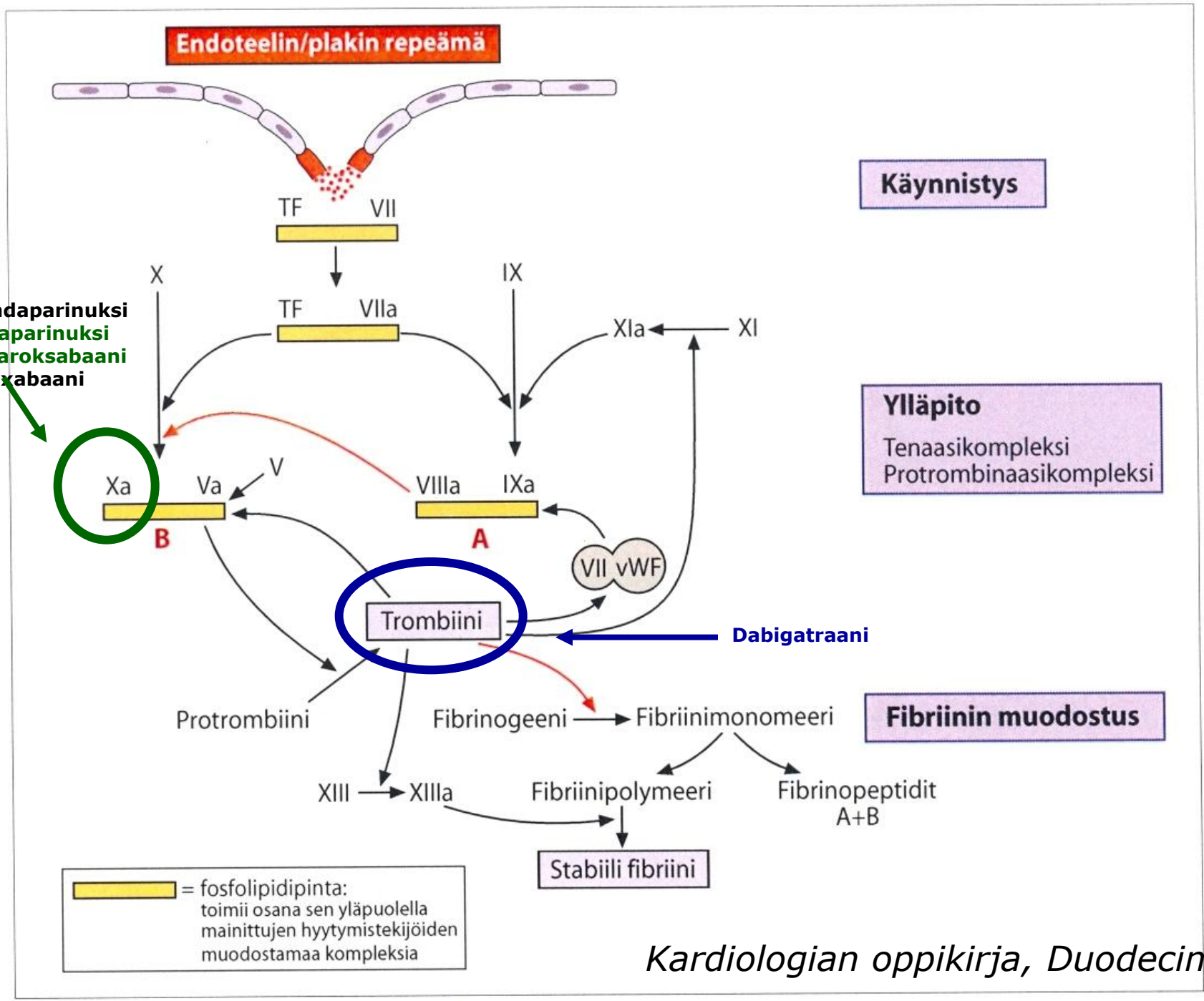
laskimotukoksen hoito





akuutti koronaarisyndrooma / sydäninfarkti

Muut indikaa-tiot



Kardiologian oppikirja, Duodecim

Kumpi parempi: FXa:n vai trombiinin esto?

Journal of Thrombosis and Haemostasis, **5** (Suppl. 1): 60–64

INVITED REVIEW

Factor Xa or thrombin: is factor Xa a better target?

J. ANSELL
Boston University School of Medicine, Boston, MA, USA

Journal of Thrombosis and Haemostasis, **5** (Suppl. 1): 65–67

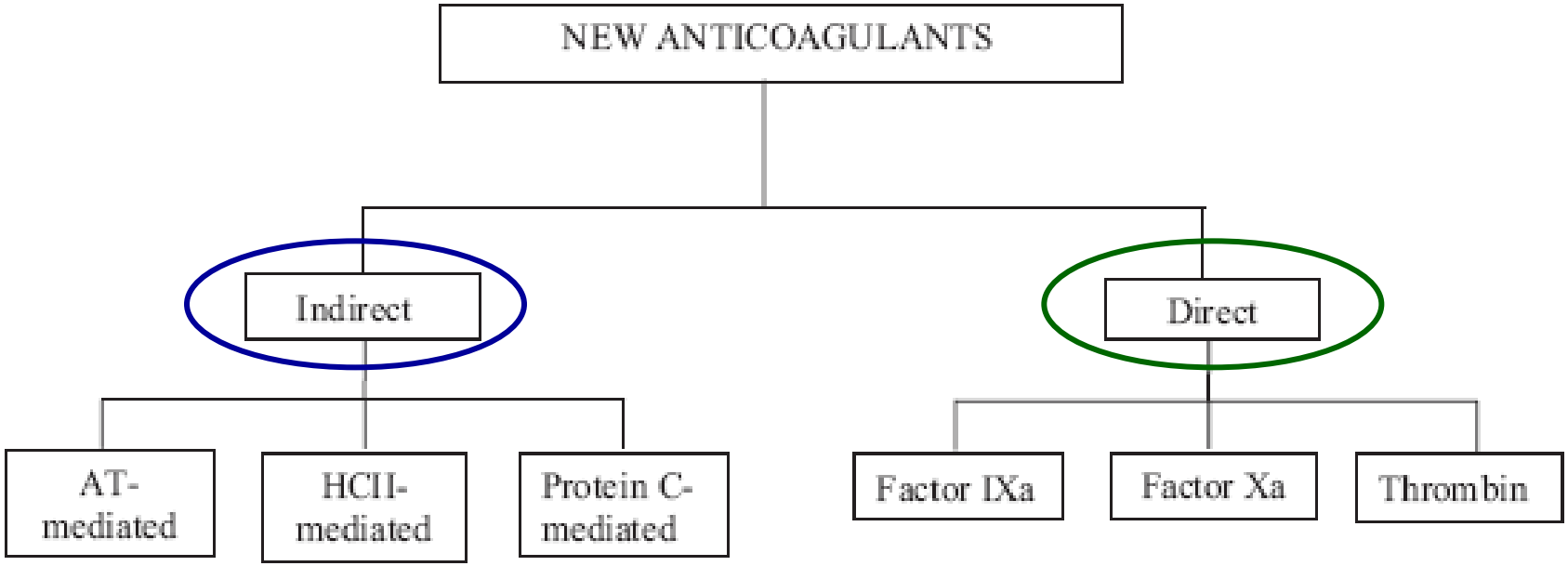
INVITED REVIEW

Factor Xa or thrombin: Is thrombin a better target?

J. I. WEITZ
Henderson Research Centre and McMaster University, Hamilton, ON, Canada

”Only time will tell.”

Valtaosa uusista antikoagulanteista vaikuttaa suoraan kohdehyytymistekijäänsä



Fondaparinuksi
Idraparinuksi

(Hepariini
LMWH)

Rivaroksabaani
Abiksabaani

Dabigatraani

(Bivalirudiini)

Table 3—*Indirect Factor Xa Inhibitors*

Drug	Route of Administration	Mechanism of Action	Stage of Development as of 2007
Idraparinux	Subcutaneous	Inhibits factor Xa in an antithrombin-dependent fashion	Completed phase III
SSR12517E	Subcutaneous	Biotinylated form of idraparinux	Phase III
SR123781A	Subcutaneous	Synthetic hexadecasaccharide that inhibits factor Xa and thrombin in an antithrombin-dependent fashion	Phase II

Table 4—*Direct Factor Xa Inhibitors*

Drug	Route of Administration	Stage of Development as of 2007
DX-9065a	IV	Stopped at phase II
Otamixaban	IV	Phase II
Razaxaban	Oral	Stopped at phase II
Apixaban	Oral	Phase III
Rivaroxaban	Oral	Phase III
LY-517717	Oral	Phase II
YM-150	Oral	Phase II
DU-176b	Oral	Phase II

Lisäksi: TF/F VII-estäjät, F IXa-estäjät, F Va-estäjät…

Chest 2008;133;234-256

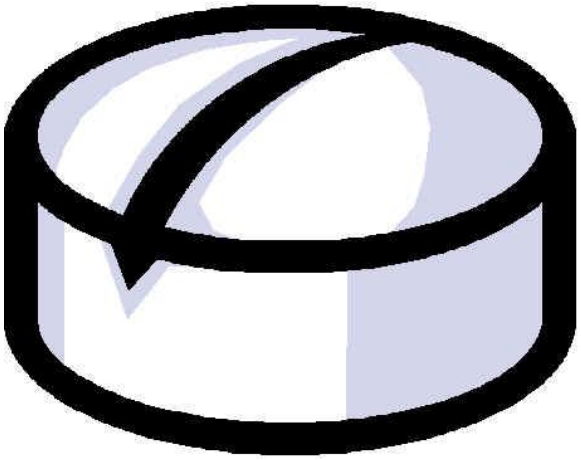
Table 6—*Thrombin Inhibitors*

Drug	Route of Administration	Mechanism of Action	Stage of Development as of 2007
Odiparcil	Oral	Primes the synthesis of dermatan sulfate-like glycosaminoglycans	Stopped at phase II
Ximelagatran	Oral	Prodrug of melagatran, a reversible inhibitor of the active site of thrombin	Briefly licensed in Europe and now withdrawn worldwide
Dabigatran etexilate	Oral	Prodrug of dabigatran, a reversible inhibitor of the active site of thrombin	Phase III

Lääkemuoto ja annostelu (hoitoannoksella)



- Idraparinuksi s.c. 1 x/viikko



- Dabigatraani 2 x/vrk
- Rivaroksabaani 1 x/vrk
- Abiksabaani 2 x/vrk
- Varfariinianalogi ATI-5923

TABLE 1. Pharmacodynamic and Pharmacokinetic Parameters of Alternative Anticogulants

	Dabigatran Etexilate	Apixaban	Rivaroxaban	Biotinylated Idraparinux
Target	Thrombin	Factor Xa	Factor Xa	AT III/ Factor Xa (indirect)
Oral Bioavailability (%)	~6.5	~80	~50	100 (subcutaneously)
Administration	Orally	Orally	Orally	Subcutaneously
T_{max} (hours)	2	3	2–4	~1–2
Half-life (hours)	Single dose: 8–10 Multiple dose: 14–17	~12	~9 (~12 in elderly)	~80
PF-4 reactivity	None	None	None	None
Antagonist available	No	No	No	Yes, fast acting (Avidin)
Metabolism/Excretion	80% renal	~2/3 fecal ~1/3 renal	~2/3 fecal (metabolized) ~1/3 renal	Mainly unchanged renally
Accumulation	Possible with twice daily regimens	Not reported	None	Possible, especially in renal failure
Food effect	Delayed absorption	Not reported	No	—
Age effect	Affects elimination	Not reported	No	Excretion prolonged
Weight effect	Not reported	Not reported	No	Excretion prolonged with low body weight
Gender effect	Not reported	Not reported	No	None
AF studies (phase)	RE-LY (III)	AVERROES (III) ARISTOTLE (III)	Rocket AF (III)	BOREALIS-AF (III)

Modified from Haas[78] and Turpie.[61]
ASA, acetyl salicylic acid; CYP3A4, cytochrom P450 3A4; NSAID, nonsteroidal anti inflammatoratory drug.

INVITED REVIEW

Will Warfarin Soon Be Passé? New Approaches to Stroke Prevention in Atrial Fibrillation

Matthias Hammwöhner, MD and Andreas Goette, MD

(*J Cardiovasc Pharmacol*™ 2008;52:18–27)

AMADEUS-tutkimus: Idraparinuksi vs. varfariini (eteisvärinä)

Oireinen embolia

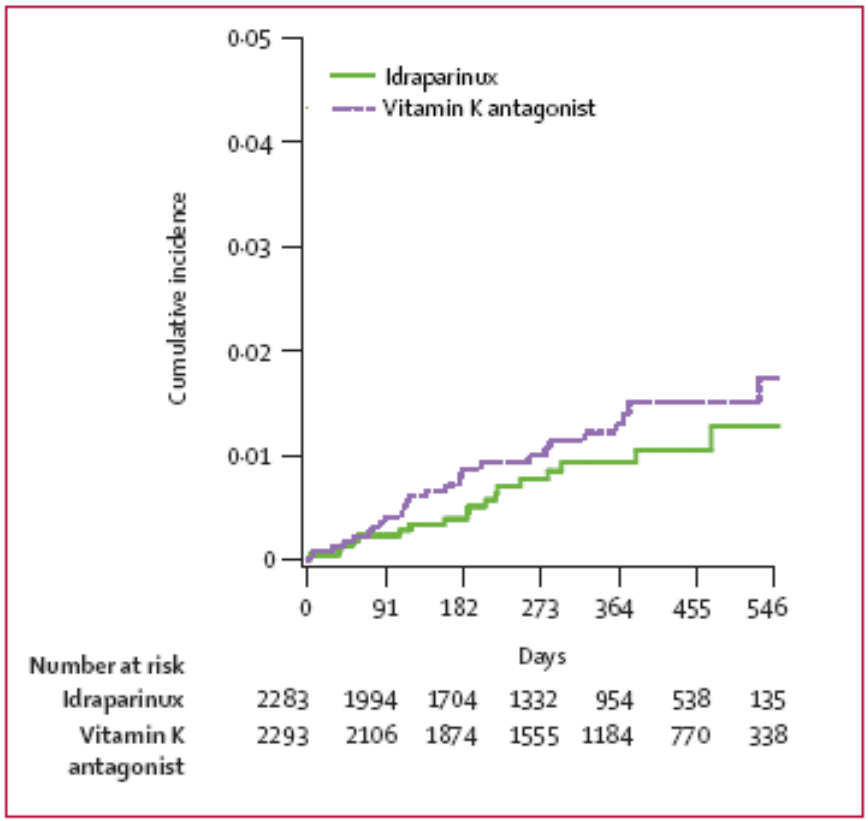


Figure 2: Kaplan-Meier cumulative incidence curves of first confirmed symptomatic recurrent stroke or non-CNS systemic embolism

Merkittävä vuoto

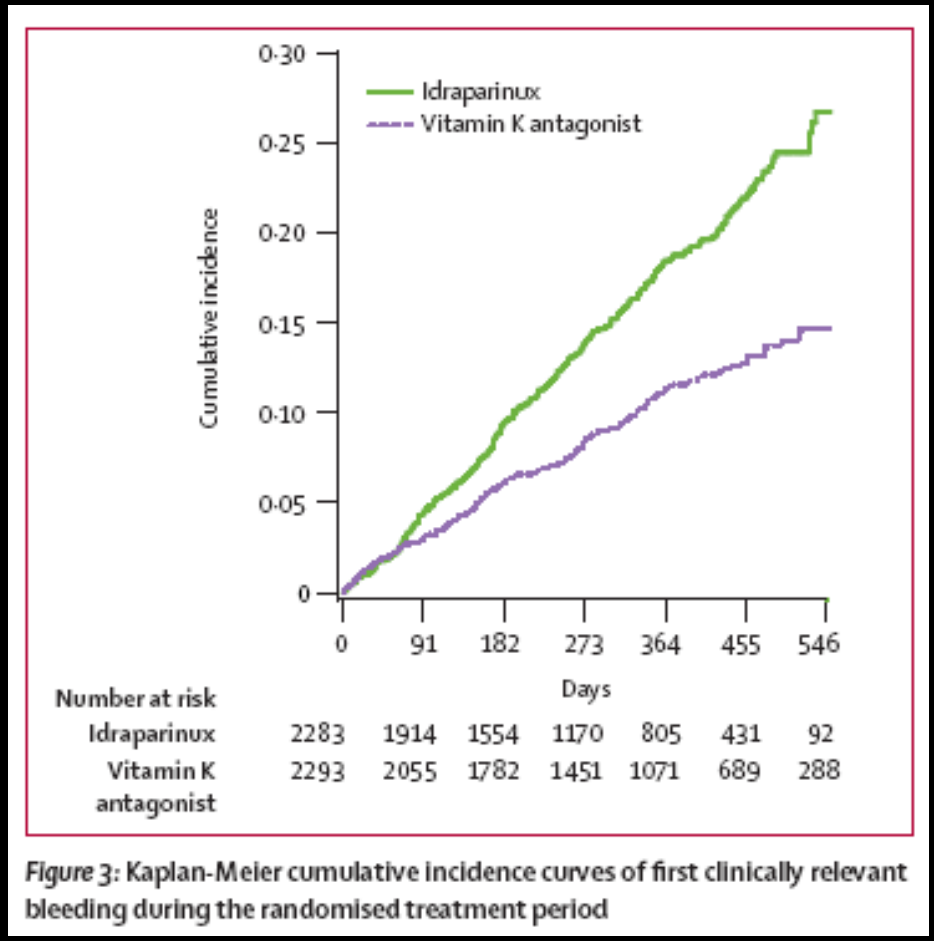


Figure 3: Kaplan-Meier cumulative incidence curves of first clinically relevant bleeding during the randomised treatment period

→ Vuoto-ongelmia

Lancet 2008; 371: 315–21

RE-LY-tutkimus: Dabigatraani vs. varfariini (eteisvärinä)

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 17, 2009 VOL. 361 NO. 12

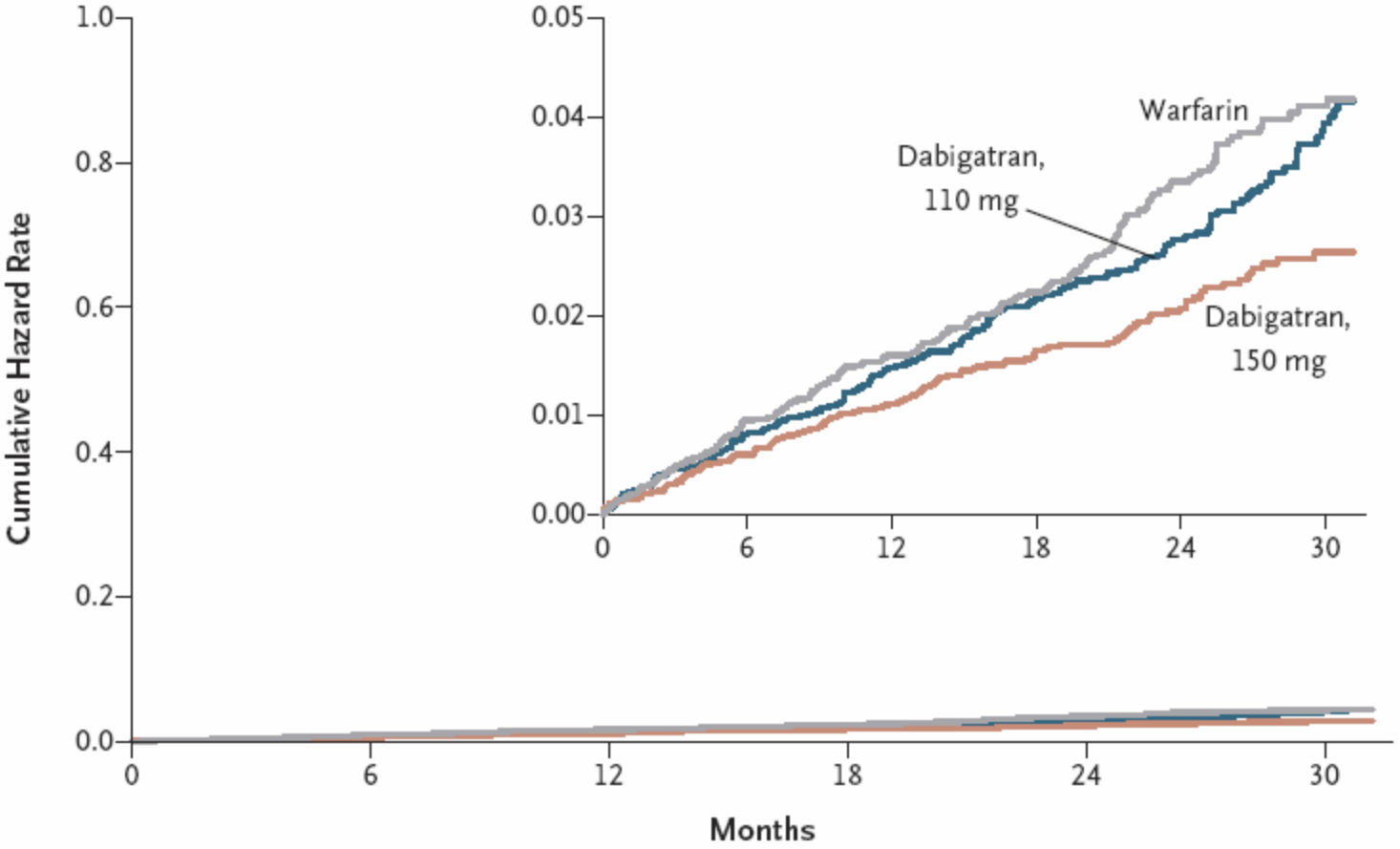
Dabigatran versus Warfarin in Patients with Atrial Fibrillation

Stuart J. Connolly, M.D., Michael D. Ezekowitz, M.B., Ch.B., D.Phil., Salim Yusuf, F.R.C.P.C., D.Phil., John Eikelboom, M.D., Jonas Oldgren, M.D., Ph.D., Amit Parekh, M.D., Janice Pogue, M.Sc., Paul A. Reilly, Ph.D., Ellison Themeles, B.A., Jeanne Varrone, M.D., Susan Wang, Ph.D., Marco Alings, M.D., Ph.D., Denis Xavier, M.D., Jun Zhu, M.D., Rafael Diaz, M.D., Basil S. Lewis, M.D., Harald Darius, M.D., Hans-Christoph Diener, M.D., Ph.D., Campbell D. Joyner, M.D., Lars Wallentin, M.D., Ph.D., and the RE-LY Steering Committee and Investigators*

18 000 potilasta

Stroke

Systemic embolism



No. at Risk

Warfarin	6022	5862	5718	4593	2890	1322
Dabigatran, 110 mg	6015	5862	5710	4593	2945	1385
Dabigatran, 150 mg	6076	5939	5779	4682	3044	1429

Figure 1. Cumulative Hazard Rates for the Primary Outcome of Stroke or Systemic Embolism, According to Treatment Group.

N Engl J Med 2009;361:1139-51.

INR OLI TAVOITEALUEELLA KESKIMÄÄRIN 64 % AJASTA

RE-LY

In the warfarin group, the mean percentage of the study period during which the INR was within the therapeutic range was 64%.

N Engl J Med 2009;361:1139-51.

Mutta: tutkimukseen osallistuneiden maiden välillä oli huomattavia eroja INR-kontrollissa.

Ruotsi oli paras (77 %), Suomi toinen (74%).

Jos INR-kontrolli on hyvä, varfariini ei ole dabigatraania huonompi

Dabigatraanin haittavaikutuksista

ADVERSE EVENTS AND LIVER FUNCTION

The only adverse effect that was significantly more common with dabigatran than with warfarin was dyspepsia (Table 4). Dyspepsia occurred in 348 patients (5.8%) in the warfarin group and in 707 patients (11.8%) and 688 patients (11.3%) in the 110-mg and 150-mg dabigatran groups, respectively ($P<0.001$ for both comparisons) (Table 4). Ele-

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ORIGINAL ARTICLE

Dabigatran versus Warfarin in the Treatment of Acute Venous Thromboembolism

Sam Schulman, M.D., Clive Kearon, M.D., Ajay K. Kakkar, M.D., Patrick Mismetti, M.D., Sebastian Schellong, M.D., Henry Eriksson, M.D., David Baanstra, M.Sc., Janet Schnee, M.D., and Samuel Z. Goldhaber, M.D., for the RE-COVER Study Group*

CONCLUSIONS

150 mg x2

For the treatment of acute venous thromboembolism, a fixed dose of dabigatran is as effective as warfarin, has a safety profile that is similar to that of warfarin, and does not require laboratory monitoring. (ClinicalTrials.gov number, NCT00291330.)

N Engl J Med 2009;361:2342-52.

ROCKET-AF –tutkimus: Rivaroksabaani vs. varfariini eteisvärinässä

- Rivaroxaban is being compared with warfarin in the Rivaroxaban Once Daily Oral Direct Factor Xa Inhibition Compared With Vitamin K Antagonism for Prevention of Stroke and Embolism Trial in Atrial Fibrillation (ROCKET-AF; www.clinicaltrials.gov; NCT00494871). ROCKET-AF is a phase 3 double-blind study comparing rivaroxaban (20 mg once daily) to warfarin in patients with nonvalvular AF and at least one other risk factor for stroke. It aims to recruit 14,000 patients worldwide. Rivaroxaban has not undergone smaller phase 2 comparisons with warfarin for the indication of AF, and dose assignment in ROCKET-AF is based on non-AF study results.

tulokset julkaistaan AHA:n kokouksessa 15.11.2010

Current Treatment Options in Cardiovascular Medicine 2008, 10:388–397

Uudet antikoagulantit eivät tarvitse rutiinimaista laboratoriomonitorointia, mutta entä ongelmatilanteissa?

LÄÄKE		
idraparinuksi	ei rutiinimaista	antiXa-aktiivisuus (erillinen kalibrointi)
dabigatraani	ei rutiinimaista	Trombiiniaika ecarin clotting time
rivaroksabaani	ei rutiinimaista	antiXa-aktiivisuus (erillinen kalibrointi)

Lääkeaineinteraktioita vähemmän kuin varfariinilla, mutta niitä kuitenkin on

LÄÄKE	
idraparinuksi	-
dabigatraani	Amiodaroni (dabigatraaniannosta pitää pienentää), muut P-glykoproteiini-inhibiittorit ja indusoijat (esim. kinidiini vasta-aiheinen, verapamiilin kanssa varovaisuutta)
rivaroksabaani	CYP3A4:ää estäviä atsoliryhmän sienilääkkeitä (esim. ketokonatsoli, itrakonatkoli) ei suositella, flukonatsolia voidaan antaa harkiten, HIV-proteaasin estäjiä, P-gp-esto (esim. ritonaviiri) ei suositella, voimakkaita CYP3A4 –indusoijia harkiten (esim. karbamatsepiini, rifampisiini)

ATI-5923: a novel vitamin K antagonist

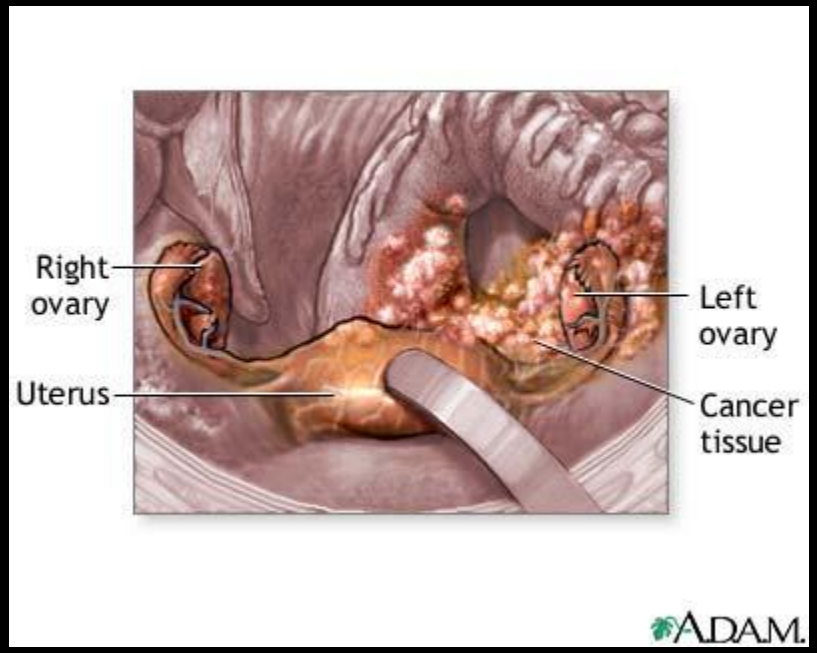
tecarfarin

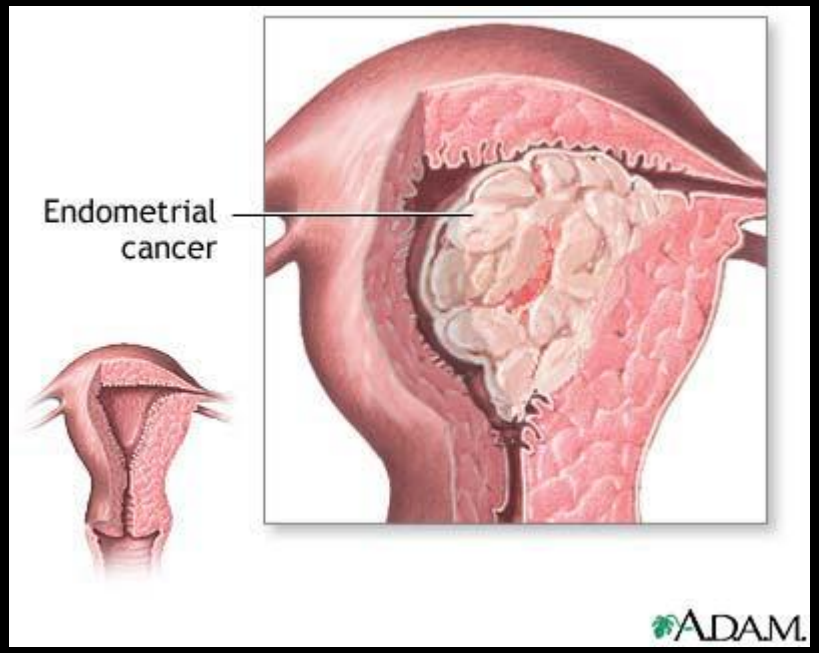
Paremmin terapeuttisella alueella kuin varfariini; 71.5 vs 59.3 % ajasta

- ATI-5923, like warfarin, is a selective noncompetitive inhibitor of vitamin K epoxide reductase. It undergoes ester hydrolysis to yield a single inactive metabolite, ATI-5900. Unlike warfarin or other vitamin K antagonists, ATI-5923 is not metabolized by the cytochrome P-450 system CYP2C9 isoenzyme [9•]. Metabolism via the CYP2C9 isoenzyme accounts for up to 20% of the interindividual variability in warfarin metabolism; because ATI-5923 is not metabolized by CYP2C9, it is more stable in the dose–response relationship than other vitamin K antagonists. ATI-5923 has a half-life of 136 hours, is metabolized by ubiquitous tissue esterases, and undergoes 100% hepatobiliary clearance [9•,10].
- Recently, a phase 2 open-label, multicenter, genotype-guided, dose-finding study of ATI-5923 in patients with AF (www.clinicaltrials.gov; NCT00431782) was completed. The primary end points of this study were duration in therapeutic range, time to reach therapeutic range, and time to achieve stable dose when compared with retrospective warfarin therapy. Results of this study will be published later this year.

Current Treatment Options in Cardiovascular Medicine 2008, 10:388–397

Syöpäpotilaan laskimotukos ja uudet antikoagulantit





Syöpä ja akuutti laskimotukos

- syöpäpotilaan laskimotukosriski on 5x verrokkiväestöä suurempi (vuodessa 5/1000 vs. 1/1000)

2.1.3. For patients with DVT and cancer, we recommend LMWH for the first 3 to 6 months of long-term anticoagulant therapy (Grade 1A). **For these patients, we recommend subsequent anticoagulant therapy with VKA or LMWH indefinitely or until the cancer is resolved (also, see Section 2.4)** [Grade 1C].



ACCP guidelines 2008

Gynekologisen syöpäleikkauspotilaan tukosprofylaksi



2008

2.3 Gynecologic Surgery

2.3.1. For low-risk gynecologic surgery patients who are undergoing minor procedures and have no additional risk factors, we recommend against the use of specific thromboprophylaxis other than early and frequent ambulation (Grade 1A).

2.3.2. For gynecology patients undergoing entirely laparoscopic procedures, we recommend against routine thromboprophylaxis, other than early and frequent ambulation (Grade 1B).

2.3.3. For gynecology patients undergoing entirely laparoscopic procedures in whom additional VTE risk factors are present, we recommend the use of thromboprophylaxis with one or more of LMWH, LDUH, IPC, or GCS (Grade 1C).

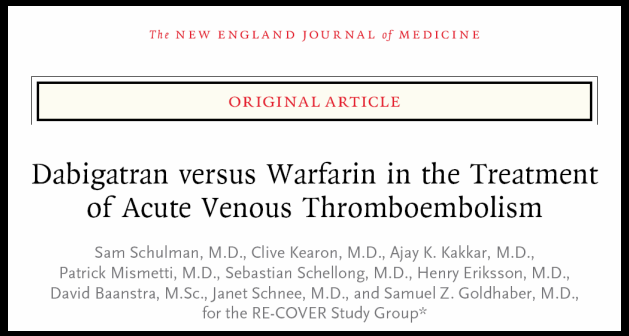
2.3.4. For all patients undergoing major gynecologic surgery, we recommend that thromboprophylaxis be used routinely (Grade 1A).

2.3.5. For patients undergoing major gynecologic surgery for benign disease without additional risk factors, we recommend LMWH (Grade 1A), **LDUH** (Grade 1A), **or IPC started just before surgery and used continuously while the patient is not ambulating** (Grade 1B).

2.3.6. For patients undergoing extensive surgery for malignancy and for patients with additional VTE risk factors, we recommend routine thromboprophylaxis with LMWH (Grade 1A), **or LDUH three times daily** (Grade 1A), **or IPC, started just before surgery and used continuously while the patient is not ambulating** (Grade 1A). **Alternative considerations include a combination of LMWH or LDUH plus mechanical thromboprophylaxis with GCS or IPC, or fondaparinux** (all Grade 1C).

2.3.7. For patients undergoing major gynecologic procedures, we recommend that thromboprophylaxis continue until discharge from hospital (Grade 1A). **For selected high-risk gynecology patients, including some of those who have undergone major cancer surgery or have previously had VTE, we suggest that continuing thromboprophylaxis after hospital discharge with LMWH for up to 28 days be considered** (Grade 2C).

Syöpä, laskimotukos ja uudet antikoagulantit?


The NEW ENGLAND JOURNAL of MEDICINE

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Dabigatran versus Warfarin in the Treatment of Acute Venous Thromboembolism

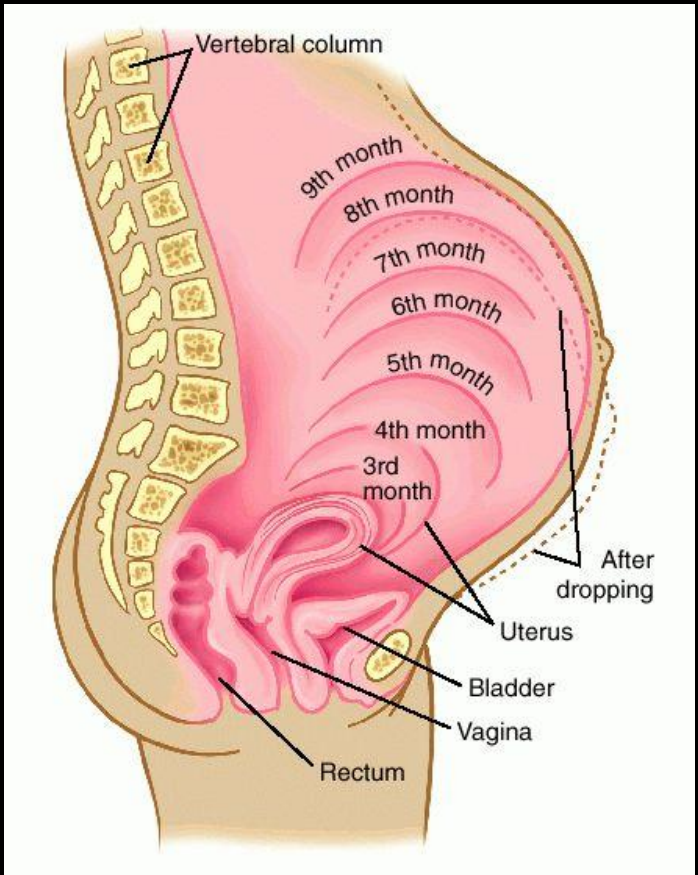
Sam Schulman, M.D., Clive Kearon, M.D., Ajay K. Kakkar, M.D., Patrick Mismetti, M.D., Sebastian Schellong, M.D., Henry Eriksson, M.D., David Baanstra, M.Sc., Janet Schnee, M.D., and Samuel Z. Goldhaber, M.D., for the RE-COVER Study Group*

- tarvitaan lisätutkimusta!
- toistaiseksi tiedetään varsin vähän:
  - laskimotukoksen hoito
    - RE-COVER (dabigatraani vs. varfariini), 5 % tutkimusaineistosta syöpäpotilaita
    - Syöpäpotilailla uusia antikoagulantteja pitäisi verrata ennemminkin LMWH:iin
  - laskimotukoksen ehkäisyä sairaalahoidossa olevilla ei-kirurgisilla potilailla (mukana syöpäpotilaita) tutkitaan parhaillaan
    - MAGELLAN-tutkimus (rivaroksabaani)
    - ADOPT-tutkimus (abiksabaani)

Syöpä, laskimotukos ja uudet antikoagulantit? Käytännöllisiä näkökohtia

- syöpäpotilailla ak-hoidon aikainen vuotoriski on suurentunut, joten antidootin puuttuminen saattaa olla erityisen ongelmallista
- pahoinvointi ja oksentelu saattavat vaikeuttaa suun kautta otettavan lääkityksen toteuttamista

Raskauden aikainen ak-hoito ja uudet antikoagulantit



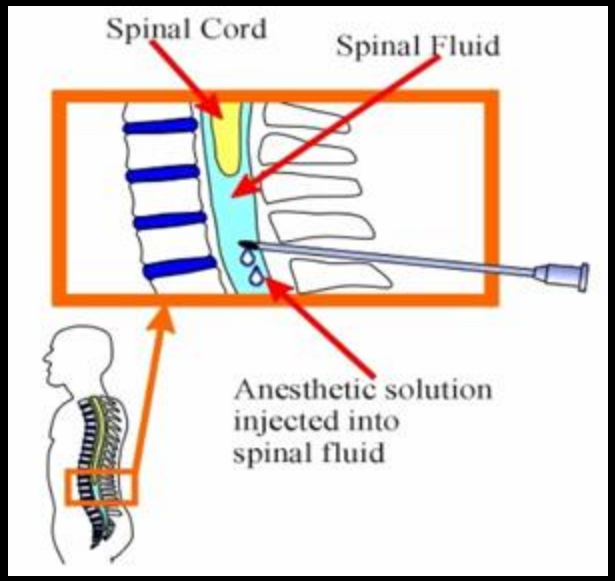
ei kliinistä tutkimustietoa

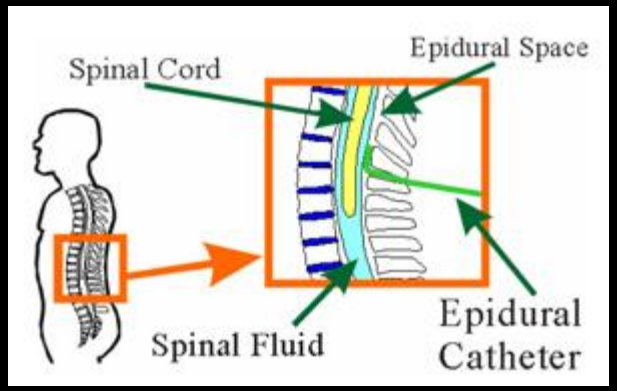
dabigatraani ei läpäise istukkaa

rivaroksabaanin on todettu jonkin verran kulkeutuvan istukan läpi (autoradiografia)

apixabaani ?

Spinaali/epiduraalianestesia ja uudet antikoagulantit





GUIDELINES

Regional anaesthesia and antithrombotic agents: recommendations of the European Society of Anaesthesiology

Wiebke Gogarten, Erik Vandermeulen, Hugo Van Aken, Sibylle Kozek, Juan V. Llau and Charles M. Samama

Eur J Anaesthesiol 2010;27:000–000

Table 2 **Recommended time intervals before and after neuraxial puncture or catheter removal**[a]

	Time before puncture/catheter manipulation or removal	Time after puncture/catheter manipulation or removal	Laboratory tests
Unfractionated heparins (for prophylaxis, ≤15 000 IU per day)	4-6 h	1 h	Platelets during treatment for more than 5 days
Unfractionated heparins (for treatment)	i.v. 4–6 h s.c. 8–12 h	1 h 1 h	aPTT, ACT, platelets
Low-molecular-weight heparins (for prophylaxis[b])	12 h	4 h	Platelets during treatment for more than 5 days
Low-molecular-weight heparins (for treatment)	24 h	4 h	Platelets during treatment for more than 5 days
Fondaparinux (for prophylaxis, 2.5 mg per day)	36–42 h	6–12 h	(anti-Xa, standardised for specific agent)
Rivaroxaban (for prophylaxis, 10 mg q.d.)	22–26 h	4–6 h	(PT, standardised for specific agent)
Apixaban (for prophylaxis, 2.5 mg b.i.d.)	26–30 h	4–6 h	?
Dabigatran (for prophylaxis, 150–220 mg)	Contraindicated according to the manufacturer	6 h	?
Coumarins	INR ≤1.4	After catheter removal	INR
Hirudins (lepirudin, desirudin)	8–10 h	2–4 h	aPTT, ECT
Argatroban[c]	4 h	2 h	aPTT, ECT, ACT
Acetylsalicylic acid	None	None	
Clopidogrel	7 days	After catheter removal	
Ticlopidine	10 days	After catheter removal	
Prasugrel	7–10 days	6 h after catheter removal	
Ticagrelor	5 days	6 h after catheter removal	
Cilostazol[c]	42 h	5 h after catheter removal	
NSAIDs	None	None	

ACT, activated clotting time; aPTT, activated partial thromboplastin time; b.i.d., twice daily; ECT, ecarin clotting time; INR, international normalised ratio; IU, international unit; i.v., intravenously; NSAIDs, non-steroidal anti-inflammatory drugs; s.c., subcutaneously; q.d., daily. [a] All time intervals refer to patients with normal renal function. [b] Maximum prophylactic dosages for low-molecular-weight heparins are listed in Table 3. [c] Prolonged time interval in patients with hepatic insufficiency.

Eur J Anaesthesiol 2010;27:000–000

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ACTA ANAESTHESIOLOGICA SCANDINAVICA
doi: 10.1111/j.1399-6576.2009.02089.x

Review Article

Nordic guidelines for neuraxial blocks in disturbed haemostasis from the Scandinavian Society of Anaesthesiology and Intensive Care Medicine

H. Breivik[1], U. Bang[2], J. Jalonen[3], G. Vigfússon[4], S. Alahuhta[5] and M. Lagerkranser[6]
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Table 4

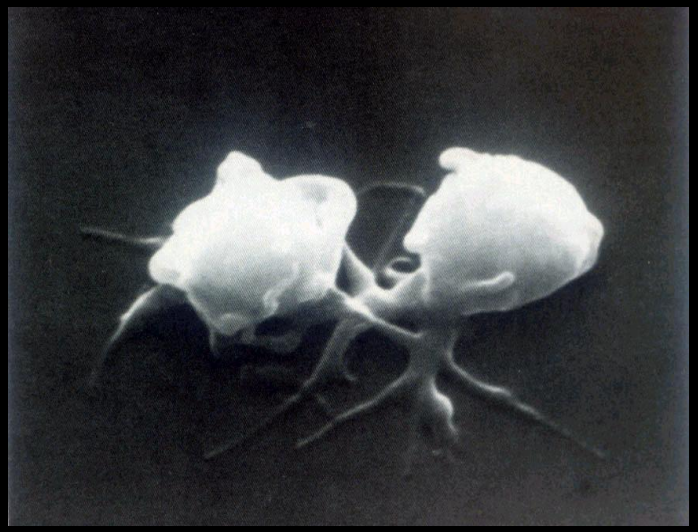
Recommendations on antihaemostatic treatment when central neuraxial block (CNB) is indicated: heparins, Xa-inhibitors, vitamin K-antagonists, and platelet inhibitors.

Recommended minimum time intervals between the last dose of a certain drug and CNB, and between CNB and first dose or iteration of the drug.
The same recommendations apply for manipulation or removal of a catheter.
Patients with delayed drug elimination (e.g., renal impairment) may require longer intervals.
Combinations of antihaemostatic drugs increase the risk of bleeding.

Antihaemostatic drug	Drug ⇨ CNB or cath. manipulation	RG	CNB or cath. manipulation ⇨ Drug	RG
Heparins/Xa-inhibitors				
Unfractionated heparin (UFH)				
≤ 5000 U (70 U/kg)/day	4 h, normal APTT and platelets*		1 h†,‡	
> 5000 U (70–100 U/kg)/day	4 h, normal APTT and platelets*,†	D^P	6 h recommended, 1–2 h common practice‡	D
> 100 U/kg/day	4 h, normal APTT and platelets*,†	D^P	6 h recommended,‡ start EDA evening before surgery†,‡	D
Low molecular weight heparin (dalteparin or enoxaparin)				
≤ 5000 U or ≤ 40 mg/day	10 h§	D^P	6 h recommended, 2–4 h common practice¶	D^P
> 5000 U or > 40 mg/day	24 h	D^P	6 h recommended, 2–4 h common practice¶	D^P
Fondaparinux				
< 2.5 mg/day (Xa+at)	36 h	D^P	6 h	D^P
Rivaroxaban (pi/oral) (Xa)	18 h	D	6 h	D
Apixaban (pi/oral-Xa-inh)	Data not available		6 h	D
Vitamin K antagonists				
Warfarin; phenprocoumon	(1–4 days, dose dependent) INR ≤ 1.4–2.2 – see Table 7 ‖	D	Restart after catheter removal ‖	D

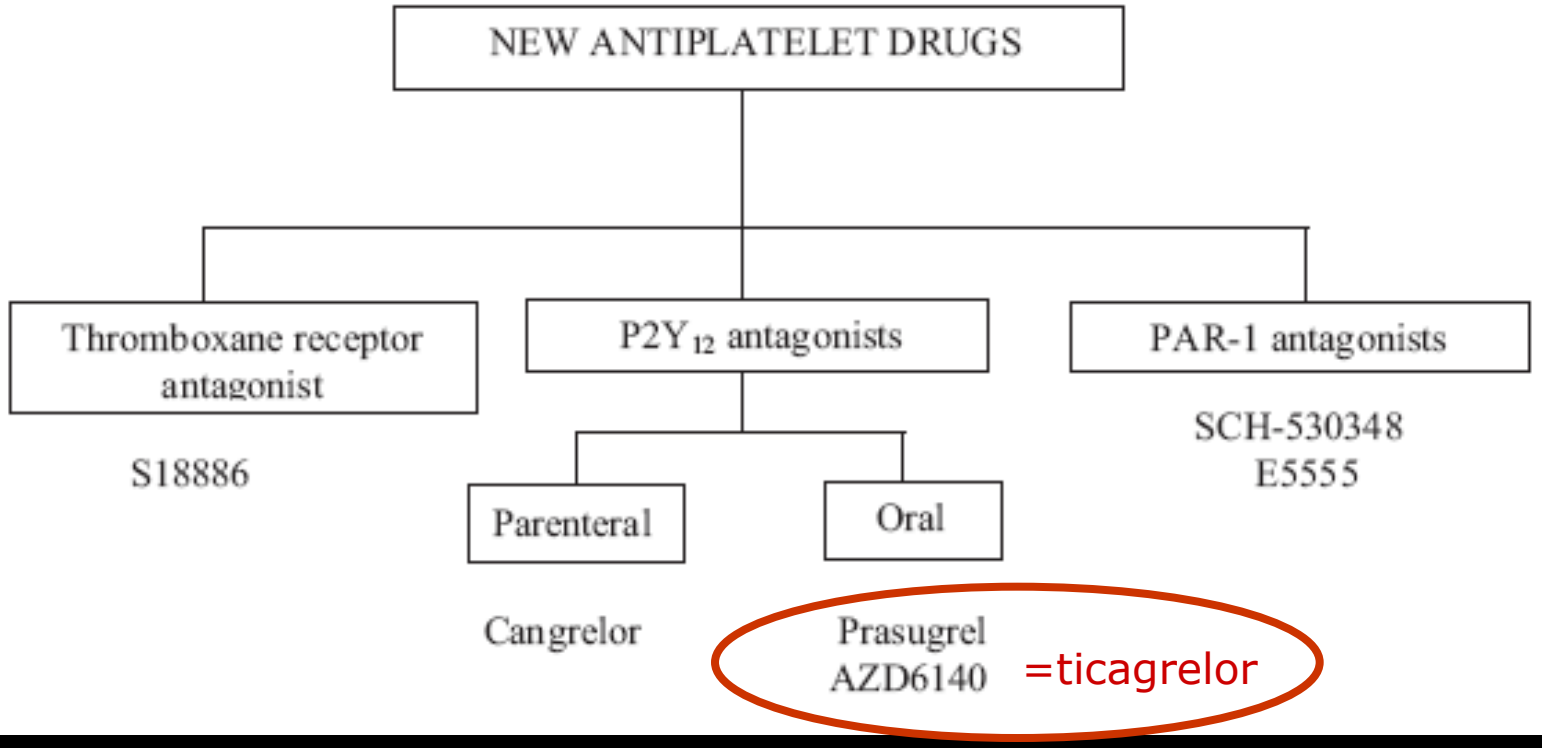
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Pari sanaa uusista verihiutale-estäjistä (prasugreeli ja tikagrelori)

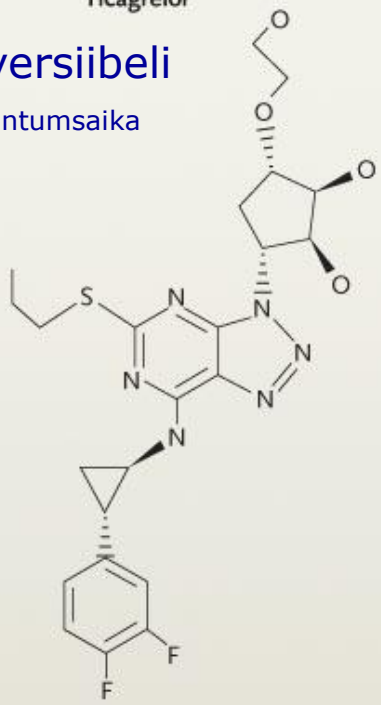
- Käytetään akuutin sepelvaltimotautikohtauksen / sepelvaltimoiden PCI-toimenpiteiden jatkohoitoon


NEW ANTIPLATELET DRUGS
Thromboxane receptor antagonist
S18886
P2Y12 antagonists
Parenteral
Oral
Cangrelor
Prasugrel
AZD6140
=ticagrelor
PAR-1 antagonists
SCH-530348
E5555

Ticagrelor

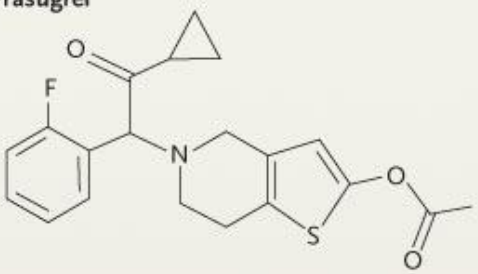
Reversiibeli

Puoliintumsaika
7-8 h



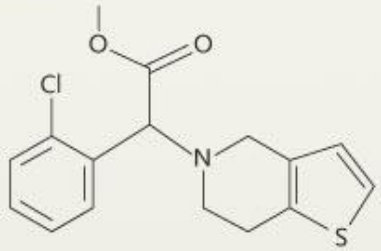
Prasugrel

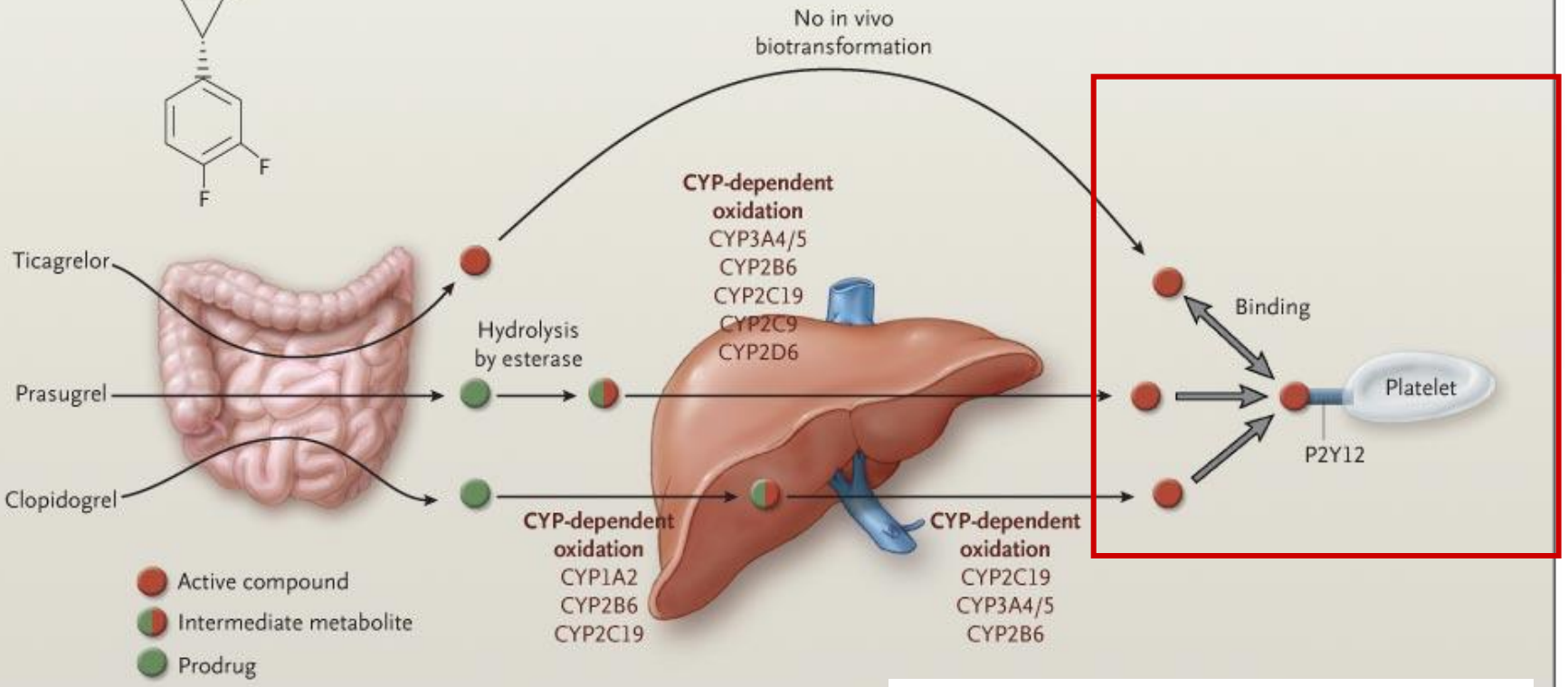
Irreversiibeli



Clopidogrel

Irreversiibeli





N ENGL J MED 361;11 NEJM.ORG SEPTEMBER 10, 2009

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EDITORIALS

Intensifying Platelet Inhibition — Navigating between Scylla and Charybdis

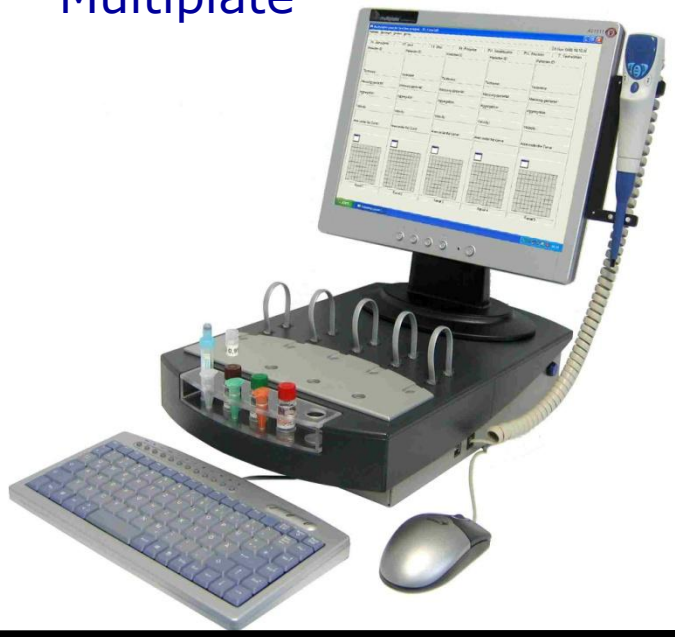
Deepak L. Bhatt, M.D.

alihoito	(yksilöllinen) sopiva annos	ylihoito

Uudet lääkkeet tehokkaampia estämään tromboosia, mutta samalla aiheuttavat useammin vuotokomplikaatioita

Leikkaus- ja toimenpidevuodot

Multiplate



Temperature measurement area: 36.7°C, in the specified range

04. Nov. 2008, 09:51:47

F1 : Auto Pipette | F2 : Start timer | F3: Start Test | F4 : Enter ID | F5 : Change ID | T : Test selection | F6 : Print | F7 : Clear channels | F8 : Screen shot | F9 : Curve mode

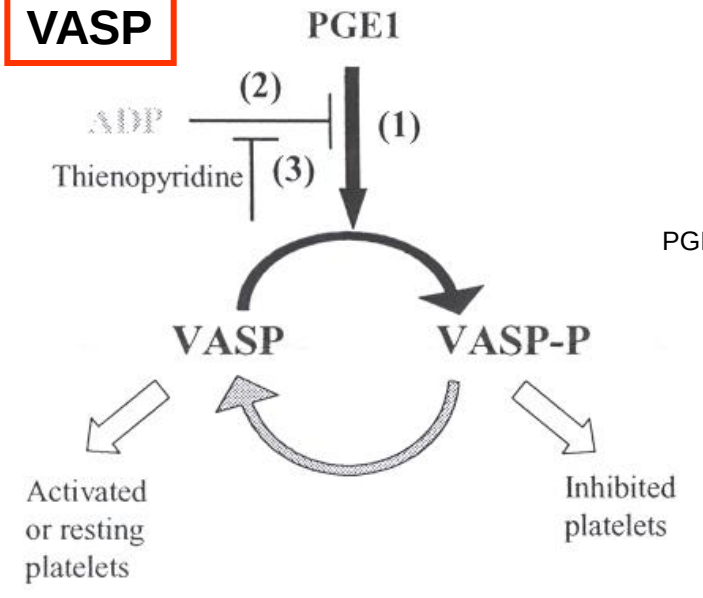
	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
Patient id :	Potilas 3	Potilas 3	Potilas 3	Potilas 3	Potilas 3 eilinen reagenssi
Test name :	TRAPtest (Hirudin blood), V1	ASPItest (Hirudin blood), V1	ADPtest (Hirudin blood), V1	ADPtest HS (Hirudin blood), V1	ASPI ASA (Hirudin blood), V1
Start: / Runtime:	04. Nov. 2008, 09:41 / 6'01"	04. Nov. 2008, 09:42 / 6'01"	04. Nov. 2008, 09:42 / 6'01"	04. Nov. 2008, 09:43 / 6'01"	04. Nov. 2008, 09:44 / 6'01"
Area under the curve :	**63 U (94 - 156)**	**23 U (75 - 136)**	**27 U (53 - 122)**	**19 U (31 - 197)**	**20 U (0 - 0)**
Aggregation :	RUO: 98.3 AU (0.0 - 0.0)	RUO: 49.9 AU (0.0 - 0.0)	RUO: 53.6 AU (0.0 - 0.0)	RUO: 39.8 AU (0.0 - 0.0)	RUO: 42.4 AU (0.0 - 0.0)
Velocity :	RUO: 17.4 AU/min.	RUO: 7.1 AU/min.	RUO: 6.3 AU/min.	RUO: 5.0 AU/min.	RUO: 4.1 AU/min.
	CC=0.996, DIF=6.260%	CC=0.986, DIF=5.660%	CC=0.999, DIF=18.068%	CC=0.998, DIF=16.580%	CC=0.998, DIF=13.107%

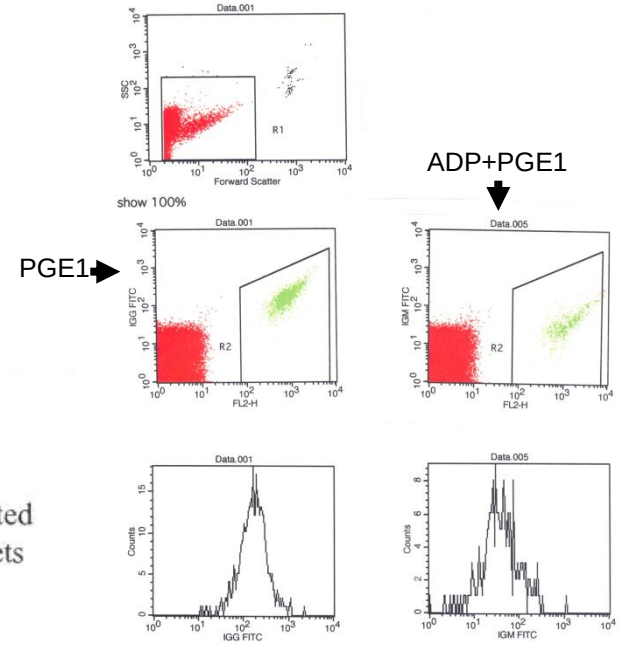
All | 100 AU

VerifyNow

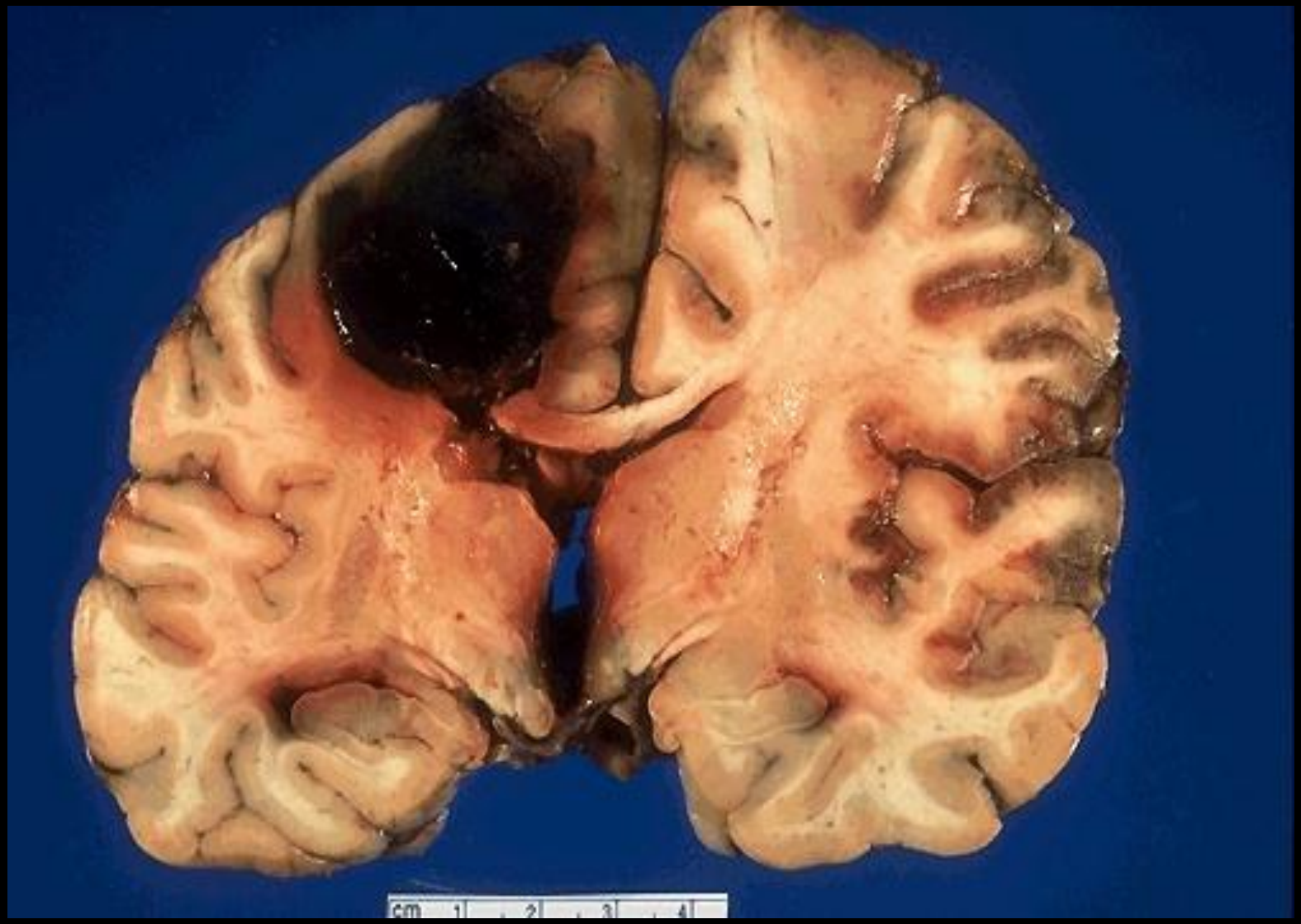


VASP

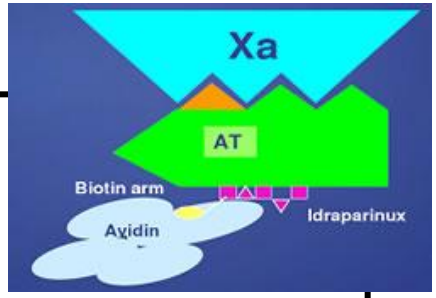




Uudet antitrombboottisen lääkkeet ja vuotokomplikaatioiden hoito



Yliannostus- ja vuototilanteet



tikagrelori prasugreeli	trombosyyttisiirto
idraparinuksi	Biotinyloidun idraparinuksin vaikutus voidaan kumota nopeasti avidiinilla
dabigatraani	Ei spesifiä antidoottia, voidaan dialysoida, riittävästä diureesista huolehdittava, lääkehiili, verituotteet Henkeä uhaavassa vuodossa esim. rFVIIa
rivaroksabaani	Ei spesifiä antidoottia, lääkehiili, rF VIIa, EI ole oletettavasti dialysoitavissa

Yhteenveto

- Antitromboottinen lääkehoito kehittyy ja muuttuu tällä hetkellä voimakkaasti
- Varfariini on saanut ja saamassa kovia kilpailijoita
- Uusien antikoagulanttien etuna on käyttömukavuus (ei monitorointia ja yksilöllistä annostelua), mutta haittana hoidon vaikea kumottavuus, hoitokokemuksen puuttuminen (mahdolliset pitkäaikaisessa käytössä ilmenevät haitat) ja hinta
- Toistaiseksi tiedetään hyvin vähän uusien antikoagulanttien tehosta syöpäpotilaan laskimotukoksen hoidossa/ehkäisyssä, ja niiden turvallisuudesta raskauden aikana