Inappropriate use of antiplatelet therapy (AP) in older patients on anticoagulation (AC) for atrial fibrillation

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Background

Most patients ≥ 75 years with Atrial Fibrillation should be
on anticoagulant therapy (AC),
as the benefit-risk balance is favourable

- Stroke = major event
- Stroke incidence : 2,0 to 20,0 % / year

Recommended therapy : **AC in most cases**
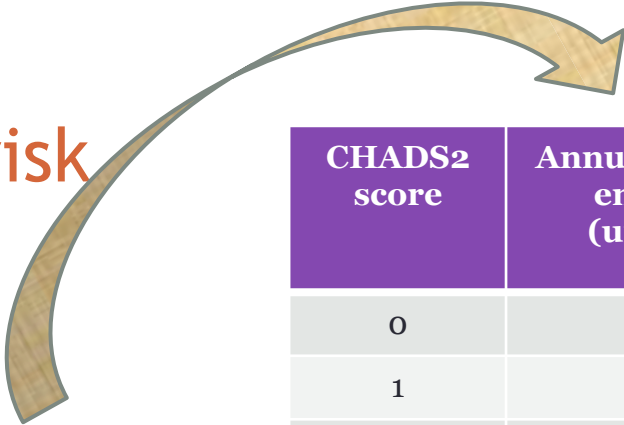
CHADS$_2$ (*vs.* CHA$_2$DS$_2$-VASc) score

We chose to use the CHADS$_2$ score for several reasons.

In contrast to the CHA$_2$DS$_2$-VASc score (recently developed to identify AF patients at very low risk of cardio-embolism who do not require anticoagulation, i.e. a very infrequent situation in frail older patients), the **CHADS$_2$ score**

1) was developed in a population of **older patients**
2) **correlates** with the stroke risk in a linear, precise (narrow confidence intervals) and valid (C statistics) manner
3) correlates with the **prescription habits** in geriatric patients
4) is **easy** to remember and to use in the daily practice

Cardioembolic risk assessement

CHADS2 Risk Factors	Score
Congestive heart failure	1
Hypertension	1
Age ≥ 75	1
Diabetes, type 2	1
Stroke or TIA	**2**

CHADS2 score	Annual risk of cardio-embolic stroke (untreated) (%)	Recommended therapy
0	1.9	AP
1	2.8	AP or AC
2	4.0	AC
3	5.9	AC
4	8.5	AC
5	12.5	AC
6	18.2	AC

incidence = ~ score x2

Hanon O et al. Archives of cardiovascular diseases 2013;106(5):303-23
Gage BF. JAMA 2001;285:2864-2870

HEMORR$_2$HAGES (*vs.* HAS-BLED) score

The HEMORR$_2$HAGES score seemed to us more appropriate (than the more recent HAS-BLED score) because it

1) was developed in a population of **older patients**
2) **predicts precisely** (narrow confidence intervals) the risk of major bleeding events when treated by anticoagulation
3) correlates with the prescription of anticoagulants in geriatric patients
4) includes **relevant items** in a geriatric population (eg: age > 75 years, malignancy, anaemia, reduced platelet function due to antiplatelet therapy, and elevated fall risk)

These features are not present in the HAS-BLED score, in which the item "labile INRs" item is not available at the time of decision-making on starting anticoagulation

HEMORR²HAGES Risk Factors	Score
Hepatic disease (cirrhosis) or renal disease (eGFR<40)	1
Ethanol abuse	1
Malignancy	1
Older age (>75 years)	1
Reduced platelet (count or function)	1
Rebleeding risk (=previous bleed)	**2**
Hypertension uncontrolled (>160mmHg)	1
Anaemia (Hb<10)	1
Genetic factors (CYT, …)	1
Elevated risk of fall (fall, PK, dementia …)	1
Stroke	1

Corrected HEMORR²HAGES
(less 1 point) if AP withdrawal

Major bleeding risk assessment

HEMORR²HAGES score [range: 0-12]	Bleeds per 100 pt-yrs ≈ annual % risk
0	1.9
1	2.5
2	5.3
3	8.4
4	10.4
≥ 5	12.3

Gage BF et Al. Clinical classification schemes for predecting hemorrhage. Am Heart J 2006; 151: 713-9

CHADS² Risk Factors	score: X/6
Cardiac failure or LV ejection fraction < 30%	1
Hypertension	1
Age (≥75 years)	1
Diabète	1
S²troke ou AIT	2

HEMORR²HAGES Risk Factors	score: Y/12
Hepatic (cirrhosis) or Renal (GFR<40)	1
Ethanol abuse	1
Malignancy (active)	1
Older age (≥75 years)	1
Reduced platelet count (< 150.000/µl) or function (AT: aspirin, plavix, ..)	1
R²ebleeding risk (previous major bleed)	2
Hypertension, uncontrolled (>160 mmHg)	1
Anaemia (Hb<10 g/dl)	1
Genetic factors (Cyt. P450, ...)	1
Excessive risk of fall (PK, dementia,..., #)	1
Stroke	1

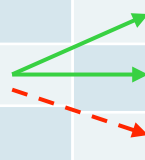In older patients (75+) with AFibrillation

2 scores should be calculated.

« Apples *versus* Apples » : Brain

if CHADS² ≥ (HEMORR²HAGES − 1)

→ **start AC** (anticoagulation)

score HEMORR²HAGES Y=	*intra-cranial /fatal Bleeding % / year [total]*
0	*0.6 [1.9]*
1	*0.8 [2.5]*
2	*1.7 [5.3]*
3	*2.8 [8.4]*
4	*3.4 [10.4]*
5 à 12	*4.0 [12.3]*

No AC → Stroke risk by cardio-embolism % / yr	No AC, score CHADS² X=
4.0	**2**
6.0	**3**
8.5	**4**
12.5	**5**
18.2	**6**

+ AP indications…

START.v2 : Aspirin

A2. aspirin (75 – 160 mg once daily) & chronic Afib. when oral AC is contraindicated

A3. antiplatelet & documented ATHerosclerotic disease

~~(diabetes mellitus + major CV risk factor)~~

AC+AP = ⬈ risk of major bleeding

Coronarien SANS STENT

Situation clinique	Avis d'Expert
Coronarien STABLE	AC seul à vie
Coronarien INSTABLE	- AC + aspirine + clopidogrel 2 à 4 semaines - Puis AC + aspirine ou clopidogrel jusqu'à 12 mois* - Puis AC seul

Coronarien AVEC STENT‡

Situation clinique	Avis d'Expert
STABLE	- AC + aspirine + clopidogrel 2 à 4 semaines - Puis AC + aspirine ou clopidogrel jusqu'à 12 mois* - Puis AC seul
INSTABLE	- AC + aspirine + clopidogrel 4 semaines - Puis AC + aspirine ou clopidogrel jusqu'à 12 mois* - Puis AC seul†

R/AC + AP
in specific & recent
(< 12 months)
conditions

Hanon O et al. Archives of cardiovascular diseases 2013;106(5):303-23
O'Mahony D et al. STOPP/LSTARTversion 2. Age Ageing 2015; 44: 213–218

Study question

Inappropriate antiplatelet therapy (AP)

in older patients on oral anticoagulation (AC)

for atrial fibrillation :

frequency ? characteristics ?

Methods & patients
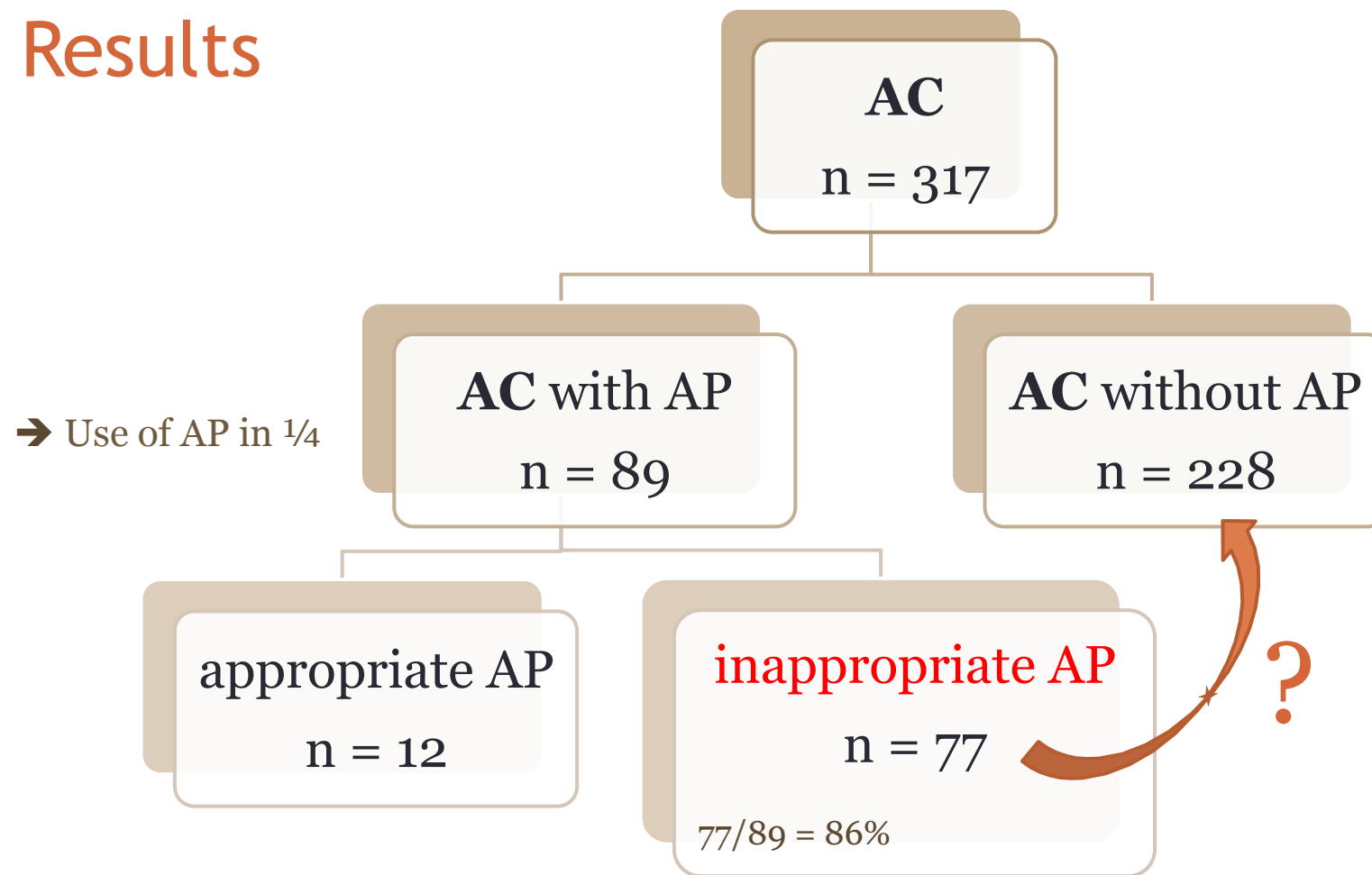
Design: cross-sectionnal study

Eligibility

- Hospital admission (2008-2010, UCL-Brussels)
- ≥ 75 years and atrial fibrillation (AFib)
- AC indicated (CHADS^2 ≥ 2) and prescribed
- CGA (comprehensive geriatric assessment)

Data Collection

- Patient's characteristics
- Bleeding risk (HEMORR^{2}HAGES)
- AP appropriateness (♥ ischemia or coronary stenting within last 12 months)

➜ Who are those patients with inappropriate AP ?

Results

➔ Use of AP in ¼

AC
n = 317

AC with AP
n = 89

AC without AP
n = 228

appropriate AP
n = 12

inappropriate AP
n = 77

77/89 = 86%

?

➔ who are those patients with inappropriate AP ?

Patient's characteristics

%	N = 77 AC + inapp. AP	N = 228 AC (0 AP)	p-value
Age > 85 years	48	45	
Gender ♂	**57**	**43**	**0,04**
At home	81	84	
Cognitive impairment	38	36	
Malnutrition	40	50	
Falls	39	42	
Hypertension	87	80	
Diabetes mellitus	*32*	*18*	*0,09*
Ischemic disease	**62**	**45**	**0,01**
AVC/AIT	43	35	

Expected bleeding risk

	N = 77 AC + inapp.AP	N = 228 AC (0AP)	p-value
HEMORR$_2$HAGES score			
median score (range: 0-12)	4	3	
mean score (range: 0-12)	3,67	2,78	
Annual risk of major bleeding, %	9,3 ± 2,4	7,4 ± 2,6	< 0,001
HEMORR$_2$HAGES corrected score (= **after AP withdrawal**)			
median score (range: 0-12)	3	3	
mean score (range: 0-12)	2,75	2,78	
Annual risk of major bleeding, %	7,5 ± 2,9	7,4 ± 2,6	NS

➔ We might each year prevent ~ 2% of major bleeding events
if AP were appropriately used
in the older patients on AC for atrial fibrillation

Conclusions

➢ AP is used in 1 in 4 older patients on AC for AFib

➢ **AP use is most frequently (86%) inappropriate**, according to guidelines (men, with CAD and/or Db2)

➢ Inappropriate AP withdrawal would **prevent a major bleeding each year in 2%** of the older patients on AC +AP

➢ Need for a **consensus on appropriate AP therapy** in older Afib patients among medical specialties

Thank you

in older patients on AC for Afib

AC
~~**+ AP**~~
~~**if stable CAD**~~

AC
+ AP
if recent ischaemia
(ACS/stent < 12 months)