British Geriatrics Society
Improving healthcare for older people

2021 Cardiovascular SIG Meeting
Hypertension in the older adult
14 May 2021

Abstracts and posters

Contents

CQ - Clinical Quality - CQ - Patient Centredness

[Poster 554] Managing decompensated heart failure in frail patients; what aspects could be improved and what could be done in the community?

Kathleen Clare; Lisa McNeil

Kathleen Clare (NHS Forth Valley); Lisa McNeil (NHS Forth Valley)

Introduction
There is a high burden of cardiovascular disease in the elderly. Hospitalisation in this vulnerable cohort can result in adverse outcomes. In NHS Forth Valley, the geriatrician-led Enhanced Community Team (ECT) helps support frail patients in the community and avoid inappropriate hospital admissions. The aim of this review is to investigate the management of heart failure in frail patients and the potential role for community based services such as ECT.
Methods
A retrospective review was performed on patients aged over 65 admitted to Forth Valley Royal Hospital between December 2019 and January 2020 with a primary diagnosis of decompensated heart failure who met frailty criteria. Case-notes were reviewed to determine details on their clinical management and outcomes.
Results
Approximately 10% of medical admissions aged over 65 were frail with a primary diagnosis of heart failure. The length of admission ranged from 1-98 days and averaged at 10 days. 59% of patients had a pre-existing diagnosis of heart failure. Only 26% of patients received an echocardiogram and 29% had an cardiology review. Oxygen was required in 62% of patients and intravenous diuretics in 79%. Outcomes were poor with a mortality rate during this admission calculated at 26%, increasing to 44% at 6 months. A Rockwood score of 5 or above correlated with a higher mortality at 6 months at 65%.
Conclusions
This review suggests the majority of frail patients with decompensated heart failure could not be initially managed in the community due to their need for intravenous diuretics and oxygen therapy. It also highlights the inconsistences in specialist cardiology input with this cohort. For frail multi-morbid patients we plan to create and test a pathway for medical step-down to ECT and see whether this could evolve to manage community dwelling heart failure patients in conjunction with the heart failure team.

MANAGING DECOMPENSATED HEART FAILURE IN A FRAIL, ELDERLY COHORT; CAN WE IMPROVE?

Dr Kathleen Clare (CDF) Dr Lisa McNeil (CONSULTANT AGEING AND HEALTH) at Forth Valley Royal Hospital.

AIM

To determine whether frail patients aged over 65 with decompensated heart failure could be managed in the community.

BACKGROUND

The incidence and prevalence of cardiovascular disease is rising with our ageing population.

Frail patients make up a high proportion of hospital admissions and there is a well recognised increased risk of morbidity and mortality in this cohort, particularly in the context of heart failure[1].

The enhanced community team (ECT) is a geriatrician led multi-disciplinary service which supports patients with frailty in the community. This team also provides follow-up for medical step-downs from hospital.

METHODOLOGY

A retrospective review was performed on patients aged >65 admitted to Forth Valley Royal Hospital between December 2019 and January 2020 with a primary diagnosis of decompensated heart failure who met frailty criteria.

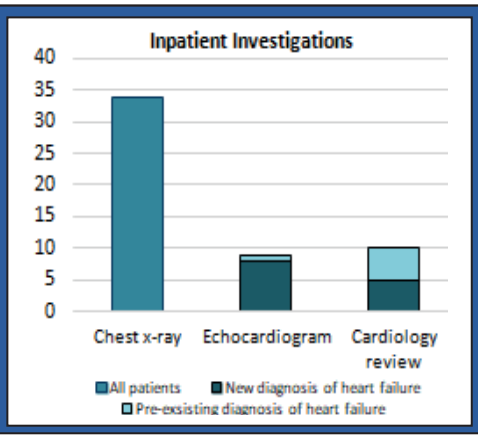
Patients were identified through screening discharge letters during the above time frame.

The full paper notes of patients fitting the review criteria were requested through medical records.

Details on their full admission, investigations, clinical management and outcomes were all documented alongside their medical history and Rockwood score.

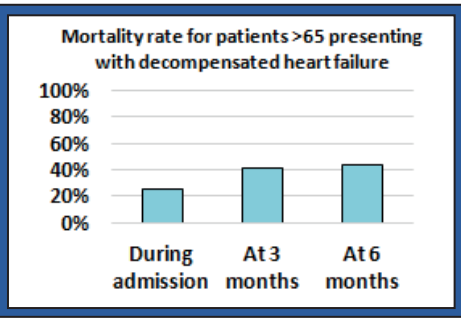
RESULTS

10% of medical admissions aged > 65 were frail with a primary diagnosis of decompensated heart failure.



All patients received a chest x-ray, 26% had an in-patient echocardiogram and 29% received a formal cardiology review by heart failure specialist nurses or cardiologist.

The average length of stay was 10 days. 62% required oxygen, 79% required Intravenous diuretics whilst the remaining 21% received oral diuretics.



The outcomes in this cohort of 34 patients were poor with a mortality rate of 26% during their admission, 41% at 3 months and 44% at six months.

A Rockwood score of 5 or above correlated with a higher mortality at 6 months at 65%.

68% of patients had advanced care plans with 24% having ReSPECT documentation and 68% having DNACPR.

CONCLUSIONS

The majority of frail patients with decompensated heart failure could not be initially managed in the community due to their need for intravenous diuretics and oxygen. There are also inconsistencies in cardiology input in this cohort.

For frail multi-morbid patients with heart failure, we plan to create and test a pathway for medical step-down to ECT. This could evolve to manage community dwelling heart failure patients in conjunction with the specialist team.

1-Ambarish P, et al. Frailty Among Older Decompensated Heart Failure Patients: Prevalence, Association With Patient-Centered Outcomes, and Efficient Detection. JACC: Heart Failure,Volume 7, Issue 12,2019.

SP - Scientific Presentation - SP - Cardio (Cardiovascular)

[Poster 607] The risk of anticoagulation in elderly fallers with Atrial Fibrillation: a systematic review and meta-analysis

Partha Sarathy P; Cruces F

Swansea Bay University Health Board; University College London Hospitals NHS trust

Introduction:
Anticoagulation of elderly patients with Atrial Fibrillation (AF) and falls remains a domain of contention amongst clinicians. There is limited evidence to guide long-term anticoagulation decision in such patients. We performed a systematic-review and meta-analysis to guide anticoagulation decision.
Methods:
We conducted a prospectively registered systematic-review and meta-analysis (PROSPERO: CRD42021228661). Studies investigating patients >65 years of age anticoagulated for AF at risk of falls were included. Outcomes included were stroke/systemic embolism (SSE), CNS bleeds, major non-CNS bleeds, and mortality. CENTRAL, MEDLINE, PsycINFO, CINAHL, DARE, Web of science and Scopus were searched. Two authors performed paper inclusion/exclusion, data extraction, risk of bias and GRADE assessment. Data was pooled quantitatively using random-effects models and expressed as Odds Ratio (OR) and 95% Confidence Intervals (95%CI).
Results:
Nine studies were included and five were combined quantitatively. Five studies had low risk of bias and four had moderate risk. Anticoagulated fallers were at higher risk of SSE (OR=1.73, 95%CI:1.21-2.47, p=0.003), CNS bleeds (OR=1.67, 95%CI:1.25-2.23, p<0.001), major bleeds (OR=1.87, 95%CI:1.66-2.11, p<0.001) and mortality (OR=1.96, 95%CI:1.71-2.25, p<0.001) compared to anticoagulated non-fallers. Anticoagulated fallers were at higher risk of major bleeds compared to fallers not on anticoagulation (OR= 1.69, 95%CI:1.03-2.77, p=0.04). However, there was no statistically significant difference in SSE, CNS bleeds or mortality. In fallers, Direct Oral Anticoagulants (DOACs) have lower risk of CNS bleeds (OR= 0.19, 95%CI:0.09-0.041, p<0.001) and major bleeds (OR=0.78, 95%CI:0.60-1.01, p=0.06) compared to warfarin. There was no statistically significant difference in SSE or mortality between the anticoagulants.
Conclusions:
Falling on anticoagulation is associated with increased risk of complications. However, only risk of major non-CNS bleeds increases when anticoagulating fallers. In fallers, DOACs appear safer than warfarin for bleeding complications. There remains paucity of evidence about anticoagulation in fallers (GRADE certainty = very low - moderate). Further evidence is needed to help clinicians and patients regarding anticoagulation.

The risk of anticoagulation in elderly fallers with Atrial Fibrillation:

A systematic review and meta-analysis

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INTRODUCTION

Atrial fibrillation (AF) is the most common cardiac arrhythmia especially amongst the elderly.[1] Anticoagulation with either warfarin or a direct oral anticoagulant (DOAC) is recommended based on risk stratification to reduce the risk of embolic ischemic stroke.[2,3]

However, with an increasing older and frailer population who are at risk of falls, the decision to start an anticoagulant can be challenging. Currently, there is limited evidence to guide long-term anticoagulation decision in elderly patients with AF at risk of fall.

AIM

To evaluate the effect of anticoagulation on elderly patients at risk of falls by performing a systematic-review and meta-analysis to HELP guide anticoagulation decision.

METHODS

We conducted a prospectively registered systematic-review and meta-analysis (PROSPERO: CRD42021228661).

Eligibility criteria

Population: patients >65 years of age anticoagulated for AF at risk of falls

Intervention: Anticoagulation in fallers

Comparator: fallers on no or a different anticoagulant; elderly non-fallers.

Outcome: stroke/systemic embolism (SSE), CNS bleeds, major non-CNS bleeds, and mortality

Study design: retrospective/prospective observational studies and randomized control trials

Information sources

CENTRAL, MEDLINE, PsycINFO, CINAHL, DARE, Web of science and Scopus (searched up to January 2021).

Hand-searching of reference lists of included studies and relevant systematic reviews.

Quality assessment

ROBINS-E tool to assess the risk of bias

GRADE for quality of the evidence from the meta-analysis[4]

Synthesis of results

Statistical analyses used Review Manager (RevMan), V5.3.

Data were pooled quantitatively using random effects models and expressed as Odds Ratio (OR) and 95% Confidence Intervals (95%CI). Heterogeneity was assessed using the I^2 statistic.

Figure 1

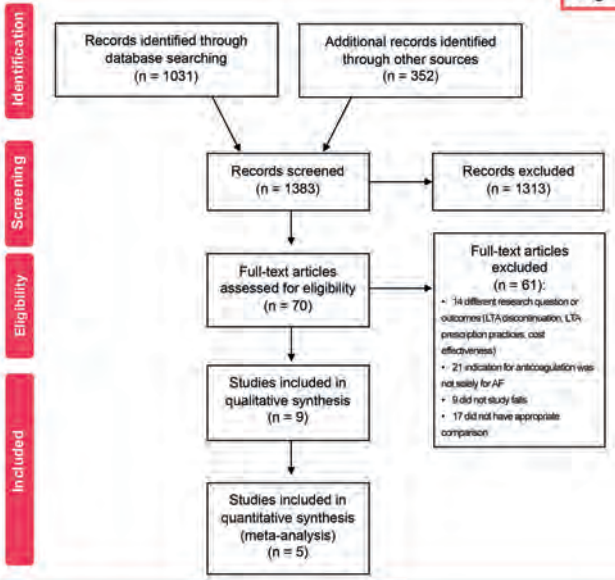


Figure 2

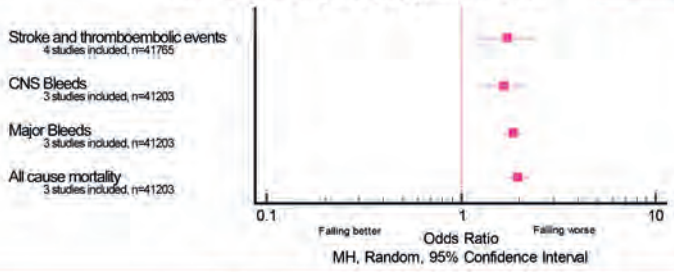


Figure 3

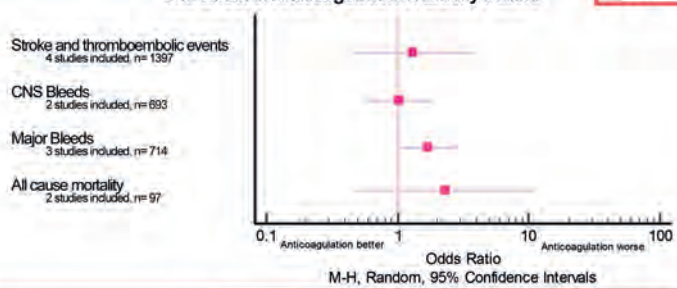
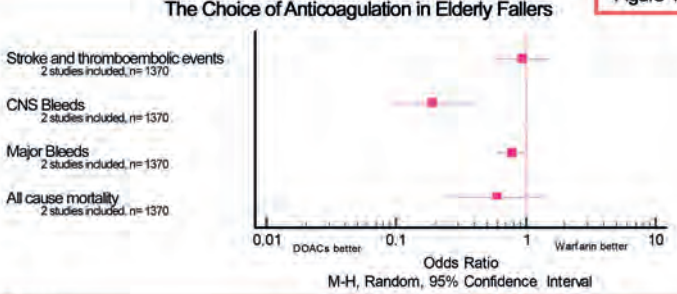


Figure 4



RESULTS

Nine studies were included and five were combined quantitatively. Five studies had low risk of bias and four had moderate risk (Fig 1).[5]

Anticoagulated fallers were at higher risk of SSE (OR=1.73, 95%CI:1.21-2.47, p=0.003, I^2 = 60%), CNS bleeds (OR=1.67, 95%CI:1.25-2.23, p<0.001, I^2 = 0%), major bleeds (OR=1.87, 95%CI:1.66-2.11, p<0.001, I^2 = 0%) and mortality (OR=1.96, 95%CI:1.71-2.25, p<0.001, I^2 = 0%) compared to anticoagulated non-fallers (Fig 2).

Anticoagulated fallers were at higher risk of major bleeds compared to fallers not on anticoagulation (OR= 1.69, 95%CI:1.03-2.77, p=0.04, I^2 = 0%). However, there was no statistically significant difference in SSE, CNS bleeds or mortality (Fig 3).

In fallers, DOACs have lower risk of CNS bleeds (OR= 0.19, 95%CI:0.09-0.041, p<0.001, I^2 = 0%) and major bleeds although not reaching statistical significance (OR=0.78, 95%CI:0.60-1.01, p=0.06, I^2 = 0%) compared to warfarin. There was no statistically significant difference in SSE or mortality between the anticoagulants (Fig 4).

CONCLUSION

Falling on anticoagulation is associated with increased risk of complications. However, only risk of major non-CNS bleeds increases when anticoagulating fallers. Interestingly, the risk of strokes and thromboembolic complications is unchanged with and without anticoagulation in our sample of fallers.
In fallers, DOACs appear safer than warfarin for bleeding complications.
There remains paucity of evidence about anticoagulation for AF in fallers (GRADE certainty = very low - moderate). Further evidence is needed to help clinicians and patients regarding anticoagulation.

References

1. Zoni-Berisso M, Lercari F, Carazza T, Domenicucci S. Epidemiology of atrial fibrillation: European perspective. (1179-1349 (Print)).
2. Pisters R, Lane Da Fau - Nieuwlaat R, Nieuwlaat R Fau - de Vos CB, de Vos Cb Fau - Crijns HJGM, Crijns Hj Fau - Lip GYH, Lip GY. A novel user-friendly score (HAS-BLED) to assess 1-year risk of major bleeding in patients with atrial fibrillation: the Euro Heart Survey. (1931-3543 (Electronic)).
3. Lip GY, Nieuwlaat R Fau - Pisters R, Pisters R Fau - Lane DA, Lane Da Fau - Crijns HJGM, Crijns HJ. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor-based approach: the euro heart survey on atrial fibrillation. (1931-3543 (Electronic).
4. Ryan R, Hill S. How to GRADE the quality of the evidence. Cochrane Consumers and Communication Group. 2016(Version 3.0).
5. Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

SP - Scientific Presentation - SP - Cardio (Cardiovascular)

[Poster 616] Reduction of Antihypertensives during Hospital Admission in Elderly Patients

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Introduction
Treatment of hypertension in the elderly is associated with significant benefit. During a hospital admission for acute illness antihypertensives may need to be reduced but should be gradually reintroduced after recovery when their blood pressure (BP) exceeds their treatment target. The aim was to assess what proportion of elderly patients were taking antihypertensives on admission, how many had these medications reduced during their inpatient stay and were the justification for alteration and follow-up advice provided in their discharge data, respectively.
Method
The records of all patients aged 65 or older discharged within a 2-month period from general medical wards were reviewed noting antihypertensive use, the proportion whose drugs were reduced, the reasons why and the quality of information recorded upon discharge. Their concomitant cardiovascular risk was assessed using the European Society Cardiology (ESC) SCORE method.
Results
Hospital notes of 155 patients were examined with a mean age of 79 (66-96). 80 patients (52%) were taking antihypertensive agents on admission. One or more of these drugs were reduced in 21% of patients. Of these 76% had either a 'high' or 'very high' SCORE risk. Only 24% of their discharge letters had a plan to re-assess their antihypertensive therapy after discharge despite an average systolic BP ≥140 in almost a third (29%). Acute kidney injury and low BP were among the reasons listed for dose reduction or cessation.
Conclusions
These data suggest that elderly patients at high risk of cardiovascular events are having antihypertensive therapy discontinued after an acute illness. A decision to reintroduce hypertensive therapy should be clearly communicated to primary care at discharge to avoid adverse cardiovascular events and reduce the risk of cognitive impairment due to uncontrolled hypertension.

Reduction of Antihypertensives during hospital admission in elderly patients

NHS University Hospitals Bristol and Weston

H Crosby, J Thomson, M Mac Mahon, Dpt. of Elderly Medicine, University Hospitals Bristol

Introduction

Hypertension treatment in the elderly is associated with significant benefit [1].

The risks of stroke, cardiac events and all-cause mortality are all reduced to a major extent with blood pressure (BP) lowering treatment. Visual loss, cognitive impairment and the development of atrial fibrillation are now all recognised complications of hypertension so older patients have so much to gain from good BP control.

During an acute hospital admission however their antihypertensive medications may need to be reduced or stopped but data regarding this practice is scarce as most if not all published drug withdrawal evidence is based on the outpatient setting [2].

Objectives

To assess these variables amongst a cohort of general medical inpatients during an 8 week period;

- What proportion of elderly patients were taking antihypertensive drugs on admission
- How many had these medications reduced during their stay
- What was their cardiovascular risk profile
- Was the justification for alteration recorded
- What proportion of discharge letters outlined advice regarding follow-up of treatment

Methods

Data of patients >65yrs that were discharged from general medical hospital wards were reviewed noting BP lowering agent use and the variables listed above.

Their concomitant Cardiovascular Risk was graded according to the European Society Cardiology Systematic COronary Risk Evaluation (SCORE) method **[Table 1]** [1].

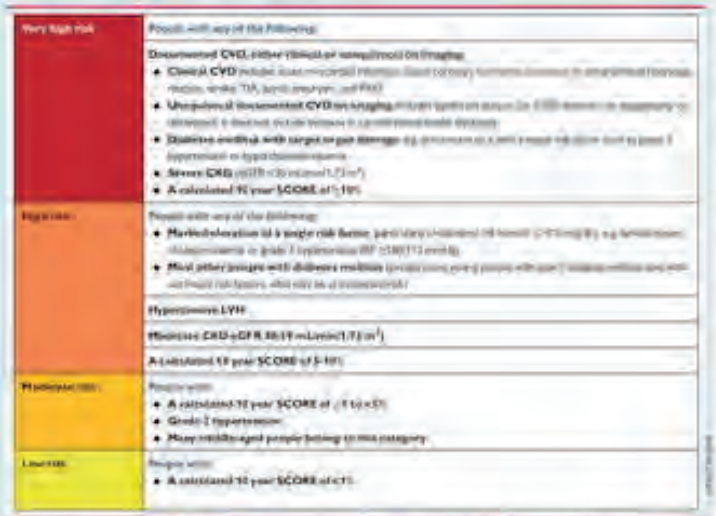

Table 1. Ten year cardiovascular risk categories (Systematic COronary Risk Evaluation System)

Their systolic BP reading on discharge was based on the average of the final three readings before leaving hospital and were graded according to the European Hypertension Society standards [1].

Results I

155 case records were reviewed.

80 (52%) taking antihypertensives on admission mean age 79 yrs, 51% male **[Table 2]**.

No. Antihypertensives	% Patients
1	54
2	30
3	11
4	4
5	1

Results II

Antihypertensives reduced/stopped in 21%. Of these, 76% had either a 'High' or 'Very High' SCORE risk.

Main reasons for antihypertensive reduction or cessation included:

- Acute Kidney Injury
- Bradycardia
- Hyponatraemia
- Hypotension

Systolic BP on discharge ≥140 in almost a third (29%).

76% of discharge letters had no follow-up plan for GP to re-assess BP and resumption of treatment.

Discussion

These data suggest that about half of older patients admitted to medical wards outside of Elderly Medicine or Cardiology are taking BP lowering agents. Just over 20% had treatment reduced during their acute illness. The risk profile in the majority were either 'High' or 'Very High' and the vast majority did not have any prescriptive advice regarding restarting treatment after discharge.

Prior studies indicate that elderly patients are amongst those least likely to maintain adequate BP control after withdrawal of treatment [2, 3]. They are also a high risk group to begin with and it is therefore important that treatment regimens are reviewed after any interference with their drug prescribing.

Systolic BPs on discharge have been shown to predict poor outcome in high risk patients [4] and a significant proportion in this study had systolic BPs above their recommended target range. Amongst elderly inpatients it has been shown that hospitalisation can alter hypertension management and that advanced age was one of the main factors associated with less aggressive treatment and with inadequate BP control [5].

References

[1] Williams B. et al. ESC Scientific Document Group, 2018 ESC/ESH Guidelines for the management of arterial hypertension. The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension: ESH). European Heart Journal. 2018; 39(33):3021–3104.

[2] Van Der Wardt V. et al. Withdrawal of antihypertensive medication: a systematic review. J Hypertens 2017;35(9):1742–1749.

[3] Nelson MR et al. Predictors of normotension on withdrawal of antihypertensive drugs in elderly patients: prospective study in second Australian national blood pressure study cohort BMJ. 2002;325(7362):815.

[4] Aksel RN et al. Prevalence and management of hypertension in the inpatient setting: a systematic review. J Hosp Med 2016;9(7):417–22.

[5] Onder G et al. Impact of hospitalization on blood pressure control in Italy: results from the Italian Group of Pharmacoepidemiology in the Elderly (GIFA) Pharmacotherapy 2003;23(2):240-7

CQ - Clinical Quality - CQ - Patient Centredness

[Poster 624] Optimisation of Cardiovascular Health in older adults and the STOPP-START criteria during hospital admission

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Introduction:
Cardiovascular disease (CVD) imposes a significant burden on older patients as prevalence rises with increasing age. Many can benefit from medications to alter their cardiovascular risk. However due to declining physiological reserve, frailty and increasing co-morbidities some medications in the elderly can have a dynamic benefit-risk ratio which may require review over time[1]. The STOPP-START criteria may be used to identify potentially inappropriate medication (PIMs) and potential prescribing omissions (PPOs)[2].
Methods:
To compare the prevalence of cardiovascular related PIMs or PPOs of inpatients over 65 years admitted acutely using the STOPP-START criteria on admission and discharge. Electronic records for patients (n=55) admitted over a 3 day period to the Acute Assessment Unit were retrospectively reviewed.
Results:
Of the total number of PIMs identified on admission (n=78), 42% were cardiovascular related medications including anti-hypertensives (n=16), anti-platelets (n=8) statins (n=7) and anticoagulants (n=2). Cardiovascular PIMs were reduced by 57% on discharge (63% reduction of anti-hypertensives, 50% of antiplatelets and 43% of statins). In terms of PPOs on admission 89% (n=35) were cardiovascular related medications in patients with CVD. There was no significant change to this group of medications on discharge from hospital (n=29).
Conclusions:
Cardiovascular medications constituted a significant proportion of PIMs and PPOs. Anti-hypertensives were the most common PIM, often due to symptomatic postural hypotension. Many patients with CVD did not have ACEi or beta-blockers prescribed. Incidence of statin prescription for primary prevention was high however many would have benefitted from an increased dose for secondary prevention. This audit highlights the need for medical optimisation of CVD which can be achieved using the STOPP-START criteria in clinical practice in order to improve cardiovascular health in older patients. 1. Department of Health, National Service Framework for Older People, 2001. 2. O'Mahony et al, Age and Aging, 2015, 44(2), 213-218.

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Optimisation of Cardiovascular Health in older adults and the STOPP-START criteria during hospital admission

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Summary:

- Cardiovascular medication is important in the elderly to reduce CVD risk. However, with time some medications become inappropriate to continue due to frailty, co-morbidities and polypharmacy.
- This audit shows a high prevalence of potentially inappropriate medications and potential prescribing omissions in the elderly inpatient population with minimal change of potential prescribing omissions on discharge. Using the STOPP-START criteria routinely in clinical practise as part of a comprehensive geriatric assessment may help to identify PIMs and PPOS and improve cardiovascular health in older patients.

Background:

- Cardiovascular disease (CVD) imposes a significant burden on older patients, with prevalence increasing with age, and many would benefit from medications to alter their cardiovascular risk.
- However due to declining physiological reserve, frailty and increasing co-morbidities medications in the elderly have a time-related dynamic benefit-risk ratio and require review over time[1].
- As part of a comprehensive geriatric assessment the STOPP-START criteria may be used to identify potentially inappropriate medication (PIMs) and potential prescribing omissions (PPOs)[2] – and therefore help optimise cardiovascular health in the elderly.

Aims:

To compare the prevalence of cardiovascular related PIMs and PPOs of inpatients over 65 years admitted acutely using the STOPP-START criteria on admission and discharge.

Methods:

The electronic records for patients aged over the age of 65 (n=55) admitted over a 3 day period to the Acute Assessment Unit were retrospectively reviewed for PIMs and PPOs on admission and on discharge.

Results:

Change in number of cardiovascular PIMs between admission and discharge

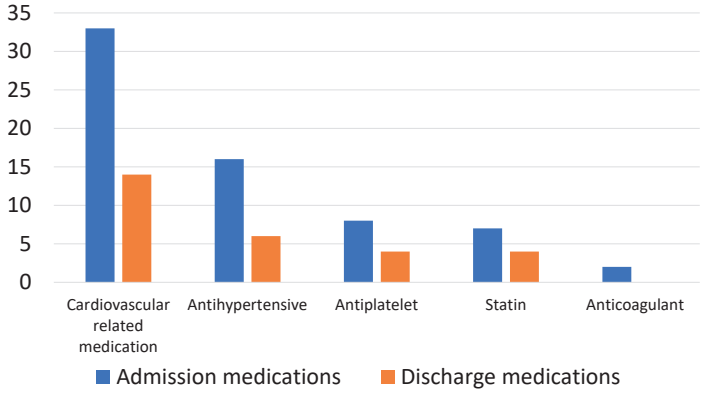

Figure 1: The change in cardiovascular PIMs between admission and discharge, divided by medication class.

- 33 of the total number of PIMs on admission (n=78) were cardiovascular related medications (42%) with 16 anti-hypertensives, 8 anti-platelets, 7 statins and 2 anticoagulants.
- Cardiovascular PIMs were reduced by 57% on discharge, with a 63% reduction of anti-hypertensives, 50% reduction of antiplatelets, 43% reduction of statins and 100% reduction of anticoagulants.

Change in number of cardiovascular PPOs between admission and discharge

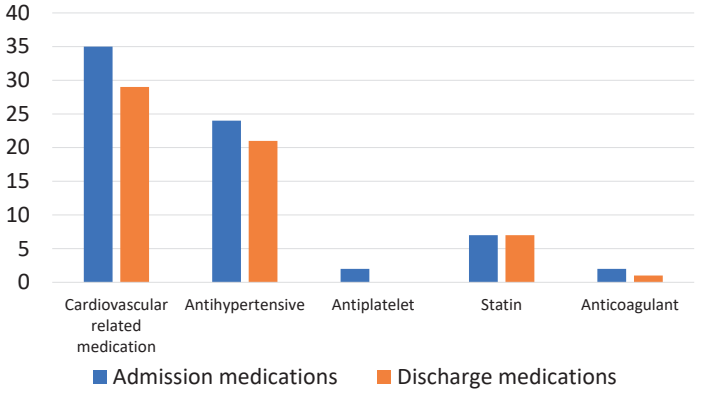

Figure 2: The change in cardiovascular PPOs between admission and discharge, divided by medication class.

- 35 of the total number of PPOs on admission were cardiovascular related medications (89%) with 24 anti-hypertensives, 2 anti-platelets, 7 statins and 2 anticoagulants.
- Cardiovascular PPOs were reduced by 17% on discharge, with a 12.5% decrease in anti-hypertensives, 100% decrease in antiplatelets, no change in statins and 50% reduction of anticoagulants

Discussion:

- Cardiovascular medications constituted a significant proportion of PIMs and PPOs in the elderly. Antihypertensives was the most common PIM with many considered inappropriate due to postural hypotension.
- Antihypertensive therapy was also the most common PPO. In addition numerous ACE inhibitors and/or beta blockers were not prescribed in those with known ischaemic heart disease or heart failure. Multiple patients were also prescribed a statin but would have benefited from higher doses for correct secondary prevention.
- PIMs were greatly reduced on discharge, likely due medication review as an inpatient. However, PPOs only decreased by a small proportion, either due to reluctance or a lack of knowledge on which medications to start and shows further scope for improvement.

Conclusion:

- Medical admission provides an opportunity to review medication burden, polypharmacy and reduce risk of adverse drug reactions.
- The prevalence of cardiovascular PIMs and PPOs is high in the elderly inpatient population.
- This audit highlights the need for medical optimisation of CVD which can be achieved using the STOPP-START criteria in clinical practice in order to improve cardiovascular health in older patients.

References:

1. 1. Department of Health, National Service Framework for Older People, 2001.
2. 2. O'Mahony et al, Age and Aging, 2015, 44(2), 213-218.

SP - Scientific Presentation - SP - Cardio (Cardiovascular)

[Poster 408] The Effects of Brain Training on Brain Blood Flow: Results from the Cognition and Flow Study (CogFlowS)

Lucy Beishon; Ronney Panerai; Hari Subramaniam; Elizabeta Mukaetova-Ladinska; ; Thompson Robinson; Victoria Haunton

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Background
Populations are ageing and there is an increasing need for strategies that can delay or reduce cognitive decline in dementia. Cognitive training (CT) has demonstrated benefits for healthy older adults and mild cognitive impairment (MCI), but the effects on vascular function are not known. This is a feasibility trial investigating the effects of CT on cerebral blood flow velocity (CBFv).
Methods
Twenty healthy older adults, 24 participants with Alzheimer's disease (AD), and twelve with MCI were randomised to 12 weeks of computerised multi-domain CT (five 30-minute sessions per week) or control. Outcomes included: cognitive performance (Addenbrooke's cognitive examination III (ACE-III)), mood, quality of life (QoL), physical, and neurovascular function (transcranial Doppler ultrasonography measured task activation of CBFv responses to five tasks from the ACE-III). Data are presented as mean difference (MD) in percentage change in CBFv, or cumulative response rate (CRR) from baseline prior to task activation. Significance testing was by independent t-test between treatment groups.
Results
47 participants completed the trial. Of the clinical outcomes, only QoL was significantly improved in healthy older adults post-training (MD: 4.83 (1.13, 8.54), p=0.014)). There was a reduction in CBFv response to visuospatial task activation in healthy older adults (MD: -10.22 % (95% CI: -19.87, -0.57), p=0.039). The CRR significantly increased in AD and MCI post-training (MD: 1.79 (95% CI: 0.005, 3.58, p=0.049).
Conclusions
Changes in CBFv responses post-CT may indicate an improvement in processing efficiency. The results of this pilot study are encouraging but require further investigation in a definitive randomised controlled trial.

The Effects of Brain Training on Brain Blood Flow: Results from the Cognition and Flow Study (CoGFlowS)

Lucy C Beishon[a], Ronney B Panerai[a,b], Hari Subramaniam[c], Elizabeta Mukaetova-Ladinska[c,d], Thompson G Robinson[a,b], Victoria J Haunton[a,b]

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Introduction

- Populations are ageing and there is an increasing need for strategies that can delay or reduce cognitive decline in dementia.
- Cognitive training (CT) has demonstrated benefits for healthy older adults and mild cognitive impairment (MCI), but the effects on vascular function are not known.

Aim

- This is a feasibility trial investigating the effects of CT on cerebral blood flow velocity (CBFv) regulation.

Methods

- Twenty healthy older adults, 24 participants with Alzheimer's disease (AD), and 12 with MCI were recruited (Figure 1).
- Participants were randomised to 12 weeks of computerised multi-domain CT (five 30-minute sessions per week) or control.
- Outcomes included: cognition, mood, quality of life (QoL), and everyday activities.
- Neurovascular function was measured by transcranial Doppler ultrasonography measured task activation of cerebral blood flow velocity (CBFv) responses (Figure 2).
- Data are presented as percentage change in CBFv, or cumulative response rate (CRR) from baseline prior to task activation.

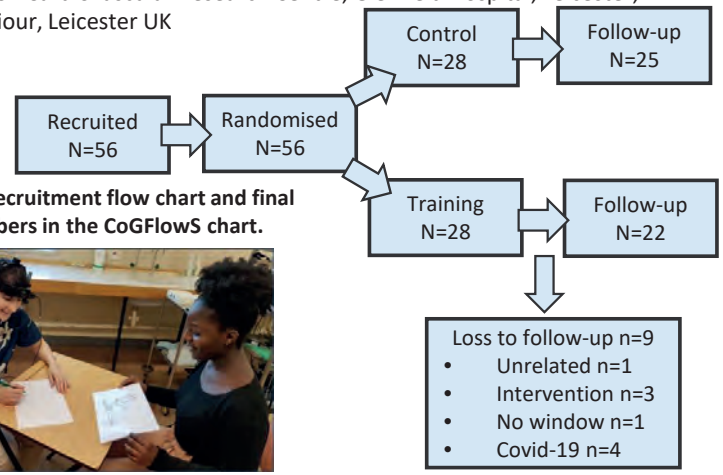

Figure 1. Recruitment flow chart and final study numbers in the CoGFlowS chart.

Figure 2. Example of the task activation protocol.

Results

- 47 participants completed the trial (Fig 1).
- CBFv response to the visuospatial task was reduced in healthy older adults (MD: -10.22 % (95% CI: -19.87, -0.57), p=0.039) (Fig 3a,b).
- In patients, there were no significant changes in task-activated CBFv after training.
- CRR significantly increased in AD and MCI post-training (MD: 1.79 (95% CI: 0.005, 3.58, p=0.049), driven by the AD group on sub-group analysis (Fig 3c)

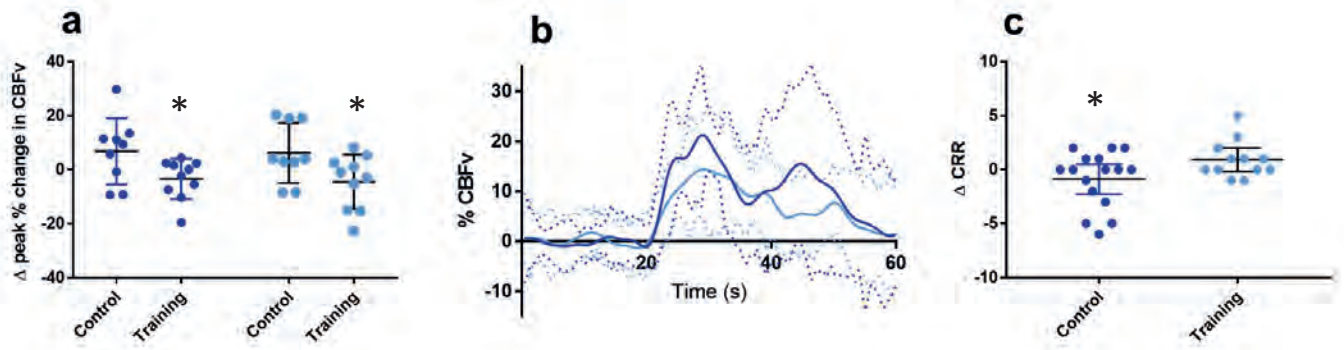

Figure 3. (a) Change in CBFv to the visuospatial task in training and control groups in the healthy cohort (dark blue= non-dominant, light blue=dominant hemisphere). (b) Population change in CBFv in the healthy cohort to the visuospatial task in control (dark blue) and training (light blue) groups. (c) Change in CRR in the AD and MCI control (dark blue) and training (light blue) groups. *statistically significant at p<0.05.

Discussion

- CT was feasible and acceptable in dementia and MCI.
- Changes in CBFv responses post-CT may indicate training-induced vascular plasticity.
- These results require further investigation in a larger, fully-powered trial.

CQ - Clinical Quality - CQ - Clinical Effectiveness

[Poster 432] Acute Coronary Syndrome: Secondary Prevention

Dr PK Pyae, Dr S Assadullah, Dr R Cama, Dr R Sunnasy, Dr P Jain

Watford General Hospital, West Hertfordshire Hospitals NHS Trust

Introduction:
Acute Coronary Syndrome (ACS) forms a significant proportion of admissions from Emergency Department (ED), resulting in approximately 150,000 hospitalisations per year in the UK. Secondary prevention and long term prognostic management is equally as important as the initial treatment. Secondary prevention medications should be commenced for all ACS patients and continued upon discharge unless contraindicated or not tolerated. These include Beta-Blocker (BB), Statin, Angiotensin-Converting Enzyme inhibitor (ACEi) or Angiotensin-II Receptor Blocker (ARB) and Mineralocorticoid Antagonist (MRA). Furthermore, fasting lipid profile and serum glycated haemoglobin (HbA1c) should be measured in all patients prior to discharge to optimise their control, or newly diagnose diabetes, as per the NICE and the ESC guidelines

Method: The purpose of this quality improvement project is to assess and improve the prescription percentage of these medications on discharge, and the screening percentage of these blood tests in all Coronary Care Unit (CCU) admissions with ACS prior to discharge. Data was collected from discharge letters, blood test records and inpatient notes over 30 day-period each round. Stepwise interventions were implemented in between the periods – first step with a local presentation, poster and email reminders, and second step with ACS stickers for inpatient notes and for blood request forms
Results:
There was a sequential improvement observed across the periods in the prescription percentage, and more significantly so for the screening blood tests – BB 89% to 100%, Statin 97% to 100%, ACEi/ARB 82% to 84%, MRA 43% to 67%, lipid profile 22% to 69% and HbA1c 22% to 67%.
Conclusion: Overall, there has been a significant and sustained increase in concordance with national and international guidelines. Further work needs to be done to evaluate the usage of stickers and also to improve on documentation of contraindications for avoiding certain secondary prevention medications.

Acute Coronary Syndrome: Secondary Prevention

Dr PK Pyae, Dr S Assadullah, Dr R Cama, Dr R Sunnasy, Dr P Jain
Cardiology Department, Watford General Hospital, West Hertfordshire Hospitals NHS Trust

West Hertfordshire Hospitals NHS Trust

Introduction and Aims

Acute Coronary Syndrome (ACS) is one of the most common acute presentations to the Emergency Departments, resulting in approximately 150,000 hospitalisations per year in the UK.[1] Secondary prevention and longer term prognostic management is equally as important as initial treatment. NICE and ESC Guidelines suggest the following medications and risk assessment for all eligible post ACS patients:[2-7]

- Beta blockers
- High dose statins
- Angiotensin converting enzyme inhibitors/ Angiotensin II receptor blockers (ACEi/ARB)
- Mineralocorticoid receptor antagonists (MRA)
- Assessing fasting lipid profile and HbA1c

The aim of this Quality Improvement Project (QIP) was to assess and improve:

- The percentage of secondary prevention medication prescriptions
- The screening for hypercholestrolaemia (despite high dose statin therapy) and diabetes mellitus

Interventions

During the first round of the QIP, we assessed the initiation of these medications on patients discharged post ACS and the number of patients who had the screening blood tests.

Prior to the second round of data collection, the following interventions were implemented:

- Posters on CCU wards
- Poster in doctors office
- Email to nursing staff and head of nursing regarding blood tests for ACS patients

Prior to the third round of data collection, the following interventions were implemented:

- Stickers placed inside patient notes detailing a checklist of medications and blood tests
- Stickers labelled "ACS" on blood request forms to automatically trigger lipid profile and HBA1C testing
- Liaison with the biochemistry laboratory to process the above request

	January	June	October
No. of patients	37	40	29
UA	10	11	8
NSTEMI	25	28	19
STEMI	2	1	2

Table 1. Number of patients in each group

Methods

- Analysis of all patients discharged with ACS diagnosis from the Coronary Care Unit (CCU) at West Hertfordshire Hospitals NHS Trust (WHHT) during the data collection periods of 30 days each was performed.
- Round 1 in January 2020, Round 2 in July 2020 and Round 3 in October 2020
- The assessment included:
  - Reviewing the discharge summary medication list
  - Assessing blood pressure and heart rate (from the Echocardiogram data) for possible contraindications
  - Reviewing blood tests during their admission (to assess for screening and renal function)

Results

- The measures introduced through this QIP resulted in improved secondary preventative prescribing in ACS patients in all four medications analysed. There was also a significant increase in HbA1c and fasting lipids testing in these patients.
- The target of 100% prescribing was achieved with betablockers and statins following the interventions.
- ACEi/ARB prescribing increased from 82% to 84% (chart 4) with MRA prescribing rising from 43% to 67% (chart 2)
- HbA1c and fasting lipids testing rose from 22% to 67% (chart 5) and 69% (chart 6) respectively.

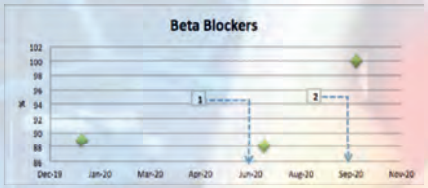

Chart 1. Beta blocker prescribing in secondary prevention post ACS

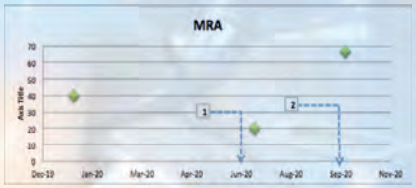

Chart 2. MRA prescribing in secondary prevention post ACS

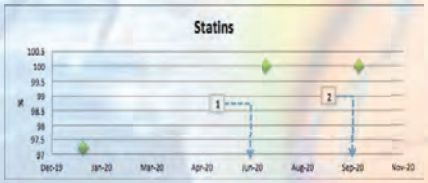

Chart 3. Statin prescribing in secondary prevention post ACS

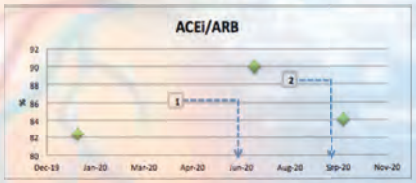

Chart 4. ACEi/ARB prescribing in secondary prevention post ACS

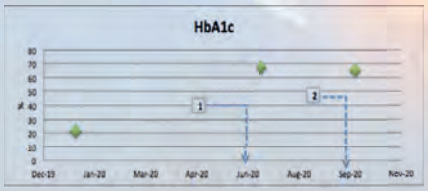

Chart 5. HbA1c testing in secondary prevention post ACS

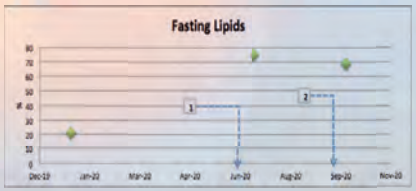

Chart 6. Fasting lipids testing in secondary prevention post ACS

1 = 18th June Departmental presentation, 30th June Ward posters
2 = 28th September Introduction of ACS stickers

Discussion

The results indicate increases in the percentage of secondary prevention medication prescriptions for ACS that were analysed.

In the case of statins and beta blockers, this increase resulted in 100% concordance with the national guidelines.

There was a significant increase in the prescription of MRAs and ACEi/ARBs also.

Despite the overall increase in the prescription of ACEi/ARB not being significant, the absolute numbers indicate >80% of patients having them correctly prescribed and therefore still representing a good result. We suspect that this is not at 100% possibly because of the lack of documentation regarding contraindications rather than poor adherence to the guidelines.

HbA1c and fasting lipids profile testing showed a very significant increase following the interventions of this QIP. Initial assessment revealed only 22% of patients were having these blood tests. The sharp increase observed after the initial interventions was then maintained following the second interventions.

Although all team members are well aware of the importance of secondary prevention medications and screening for additional risk factors, these can sometimes be easily overlooked on a busy ward with multiple new admissions and discharges each day. The interventions implemented during this QIP were introduced to act as a prompt to all members of the team with the aim of improving patient care.

Conclusion

Overall there has been a significant and sustained increase in concordance with the national guidelines in respect to the prescription of medications in secondary prevention for ACS as well as HbA1c and fasting lipids testing.

Further work needs to be done to identify whether patients are not being prescribed all the secondary prevention medications or whether this is a matter of documenting contraindications.

Contact Information

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References

1. Acute Coronary Syndrome in adults: scope of the problem in the UK. Gale C P. Br J Cardiol. (2017)
2. Myocardial infarction: cardiac rehabilitation and prevention of further cardiovascular disease (2013) NICE guideline CG172 [Internet]. London: National Institute for Health and Care Excellence (UK); 2013
3. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). Ibanez B et al. Eur Heart J. (2018)
4. 2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: Task Force for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology (ESC). Roffi M et al. Eur Heart J. (2016)
5.. Hyperglycaemia in Acute Coronary Syndromes: Management of Hyperglycaemia in People with Acute Coronary Syndromes Centre for Clinical Practice at NICE (UK) et al. . (2011)
6. Hyperglycaemia in acute coronary syndromes: Evidence Update February 2013: A summary of selected new evidence relevant to NICE clinical guideline 130 'Management of hyperglycaemia in acute coronary syndromes' (2011) [Internet] et al. . (2013)
7. Cardiovascular disease: risk assessment and reduction, including lipid modification (2014) NICE guideline CG181 [Internet]. London: National Institute for Health and Care Excellence (UK); 2014

Acknowledgement

Thank you to the Cardiology Department and CCU team at WHHT for contributing to this project, stickers printing service and the biochemistry lab for assisting with the interventions, Dr R Sunnasy and Dr P Jain for their kind supervision and the BGS Cardiovascular SIG meeting 2021 for the opportunity to present this project.

SP - Scientific Presentation - SP - Cardio (Cardiovascular)

[Poster 444] Cardiopulmonary Resuscitation: Knowledge And Attitude Of Doctors From Lahore

Ayesha Iqbal

Services Institute of Medical Sciences Lahore

INTRODUCTION:

- Cardiopulmonary resuscitation (CPR) is described by the American Heart Association (AHA) as a part of a "chain of survival" that is an emergency medical procedure for the victims of sudden cardiac arrest or respiratory arrest.
- Inadequacy in any step of CPR due insufficient knowledge and attitude is associated with the poorer return of spontaneous circulation outcomes and decreased survival rate.
- There has not been any study done in Lahore to evaluate the knowledge and attitude of doctors regarding this highly effective manoeuvre. Furthermore it is the largest study done so far in Pakistan in this regard.

PLACE AND DURATION OF STUDY:

Study has been conducted from March 2019 to March 2020 in the six hospitals of Lahore included Jinnah Hospital Lahore, Mayo Hospital Lahore, Punjab Institute of Cardiology Lahore, Sir Ganga Ram Hospital Lahore, Services Hospital Lahore, and Mid City Hospital Lahore.

METHODOLOGY:

It was a cross sectional study. Sample size calculated was 792 at the confidence level of 95% and the relative precision of 5%. Total respondents were 724. A structured questionnaire consisting of 34 questions and designed according to the current AHA guidelines was used. Data were analysed using statistical package for social sciences (SPSS)23 version. Chi-square significant test was used for the comparison of different variables. Knowledge was assessed based on the scores (good knowledge = score ≥10/15 and poor knowledge = score < 10/15).

RESULTS:

Knowledge of 600(83%) respondents was poor and only 123 (17%) doctors had good knowledge. Anaesthesiologists had the highest score than the other specialists. Score increased with the increase in years of experience except the unusual low score achieved by he consultants.

CONCLUSION:

Overall knowledge of the doctors regarding CPR is not satisfactory. However, attitude of doctors towards CPR is positive.

CQ - Clinical Quality - CQ - Clinical Effectiveness

[Poster 448] Atrial Fibrillation and DOACs dosing

LAI LAI WYUT YEE

Blackpool Teaching Hospital

Introduction
Atrial Fibrillation (AF) is one of the most common forms of abnormal heart rhythm and if left untreated is a significant risk factor for stroke and other co-morbidities. Men are more commonly affected than women and the prevalence of AF increases with age. AF is a contributing factor to one in five strokes and treatment with an oral anticoagulant medication reduces the risk of stroke in someone with AF by two thirds. The aim of anticoagulants treatment is to prevent complications, particularly stroke, to manintain the normal heart rhythm or slow the heart rate in people who remian in AF with anti-arrhythmics.
Method 1. All AF patients with a CHA2DS2VASc score of more than 2 for women and more than 1 for men were included in the audit. 2. Data were collected from 100 of patients admitted to cardiology wards. 3. Prescribing for each practice will be re-evaluated six months after the initial audit.
Results
In 100 patients, 70 patients were taking anticoagulants for persistent AF, 23 were paroxysmal AF and 7 were atrial flutter. Among them, 51% were taking Apixaban, 14% for Rivaroxaban, 31% for Edoxaban and only 4% for Dabigatran. 75% of patients were taking DOACs with full dosage and 25% with reduced dosage of DOACs. Among 25% of reduced dosage, mostly were found to have reduced dose without particular reasons. 91% of AF patients were taking appropriate DOACs dosing and 10% were taking inappropriate dose.
Conclusion
Education is a useful intervention in raising awareness among healthcare professionals. This audit aims to evaluate whether patients with atrial fibrillation who have a CHA2DS2VASc score of more than 2 for women and more than 1 for men, are prescribed appropriate dosage of different types of anticoagulant treatment according to BNF anticoagulants dosage criteria.

Atrial Fibrillation and DOACs Dosing

Lai Lai Wyut Yee, Farhan Malik
Blackpool Teaching Hospital NHS Foundation Trust

Introduction

- Atrial Fibrillation (AF) is one of the most common forms of abnormal heart rhythm and if untreated is a significant risk factor for stroke and other co-morbidities.
- Men are more commonly affected than women and the prevalence of AF increases with age.
- AF is a contributing factor to one in five strokes and treatment with an oral anticoagulant medication reduces the risk of stroke with AF by two thirds.
- The aim of anticoagulants treatment is to prevent complications, particularly stroke, to maintain the normal heart rhythm or slow the heart rate in people who remain in AF with anti- arrhythmic.

Background

Direct oral anticoagulants (DOACs) have a similar efficacy in terms of stroke and mortality reduction as compared to vitamin K antagonists (VKAs) and improved safety with regards to intracranial hemorrhage in patients with non- valvular atrial fibrillation. Dose of DOACs needs to be adjusted according to age, weight, renal function and concomitant medications.

Objectives

- To reduce mortality and improve quality of life in patients with AF
- To reduce AF related complications

Methods

- All AF patients with a CHA2DS2VASc score of more than 2 for women and more than 1 for men were included in the audit.
- Data were collected from 100 patients admitted to cardiology wards in three months.

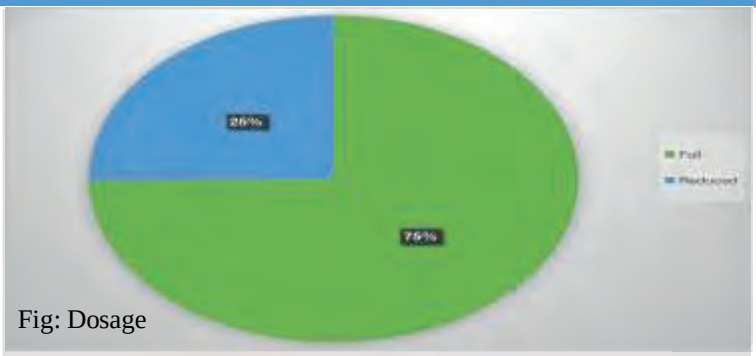


Fig: Dosage

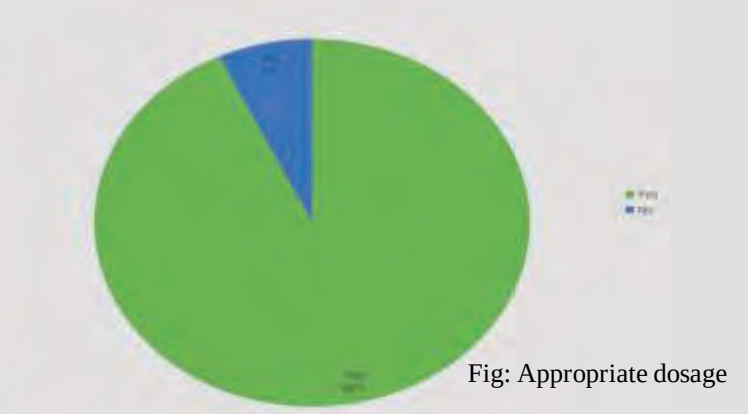


Fig: Appropriate dosage

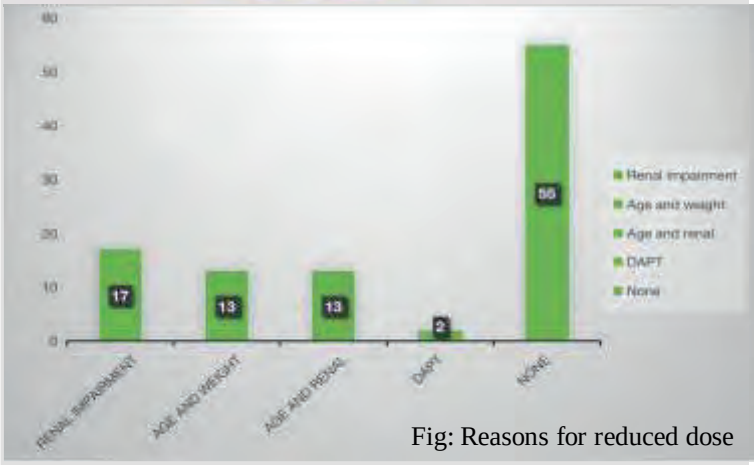


Fig: Reasons for reduced dose

Results

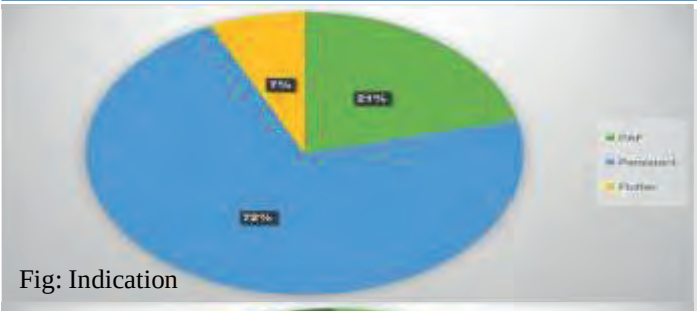


Fig: Indication

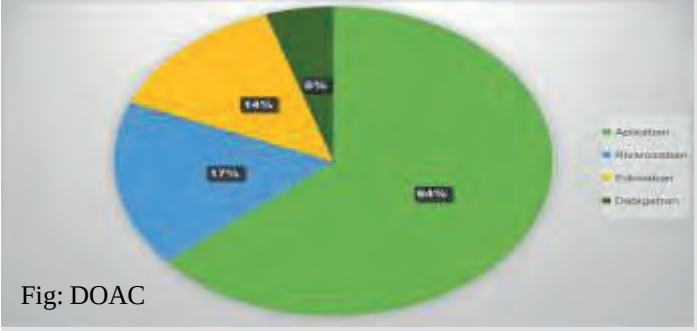


Fig: DOAC

Conclusion

- Inappropriate dosing of direct oral anticoagulants (DOACs) is not uncommon in treating AF patients.
- Inappropriate dosing may be associated with increased risk for cardiovascular hospitalization and/or adverse events like bleeding and all-cause mortality.
- Underdosing of DOACs may increase stroke risk, while not reducing rates of major bleeding.
- Education is a useful intervention in raising awareness among healthcare professionals.
- Aims to evaluate whether patients with atrial fibrillation who have a CHA2DS2VASc score of more than 2 for women and more than 1 for men, are prescribed appropriate dosage of different types of anticoagulant treatment according to BNF anticoagulants dosage criteria.

References: European Heart Journal, volume 40
BMJ appropriate DOAC dosing
ESC guidelines

SP - Scientific Presentation - SP - Big Data

[Poster 449] How many are on target? Investigating the management of new diagnosis hypertension in people over 65 and predictors of failure

Oliver Johnson (1), Mohammad Yadegarfar (2), Tatendashe Dondo (2), Chris Wilkinson (3), Chris P Gale (2), Oliver Todd (4)

(1) School of Medicine, University of Leeds; (2)Leeds Institute for Data Analytics, University of Leeds; (3) Population Health Sciences Institute, Newcastle University; (4) Academic Unit for Ageing and Stroke Research, University of Leeds

Background:
Each year, hypertension contributes to over ten million deaths worldwide and affects more than two thirds of people aged over 65 years. Blood pressure (BP) remains insufficiently controlled in over half of those treated for hypertension. The aim of this study was to describe, in a UK population, the proportion of older people with hypertension attaining current guideline BP targets and determine predictors of non-attainment.
Methods:
Nationwide cohort study of Welsh primary care data from the Secure Anonymised Information Linkage (SAIL) databank. All patients were over the age of 65 and newly diagnosed with hypertension between 1st June 2005 and 1st June 2006. Average systolic and diastolic BP at 6-18 months follow-up were used to assess attainment of National Institute for Health and Care Excellence (NICE) guideline BP targets. Cardiovascular risk profile, BP-lowering treatment, comorbidity count and frailty status were investigated to determine predictors of non-attainment. We undertook multi-variable logistic regression using R.
Results :
9,939 patients were included, 55% were women, median age: 73 (IQR 69-79) years, 44% of whom attained target BP. Reaching target was associated with patients: older than 80 years (adjusted OR 2.55, 95% CI: 2.18-2.98); received BP-lowering treatment (adjusted OR 1.17, 95% CI 1.01-1.36); had cardiovascular disease (adjusted OR 1.75, 95% CI 1.55-1.97). Reaching target was less likely in association with obesity (adjusted OR 0.79, 95% CI 0.68-0.91) and high cholesterol levels (adjusted OR 0.86, 95% CI 0.82-0.90).
Conclusions:
In this patient population over the age of 65 years, fewer than half attained target BP within a year of diagnosis of hypertension. Failure to reach NICE treatment targets was associated with obesity and higher cholesterol levels. These predictors may help identify a population sub-group for whom a different or more intensive approach to hypertension management is required.

How Many are on Target? Investigating the Management of New Diagnosis Hypertension in People Over 65 and Predictors of Failure

O. Johnson, M. Yadegarfar, T. Dondo, C. Wilkinson, C. Gale, O. Todd

Leeds Institute for Data Analytics

UNIVERSITY OF LEEDS

1. Hypertension

- Contributes to over ten million deaths worldwide, per year
- Affects more than two thirds of people aged over 65 years
- Blood pressure (BP) remains insufficiently controlled in over half of those treated for hypertension

2. Aims

1. Describe the proportion of older people with hypertension attaining current guideline BP targets
2. Determine predictors of non-attainment.

3. Methods

Data	•Nationwide cohort study of Welsh primary care data from SAIL databank
Participants	•Over the age of 65 •Newly diagnosed with hypertension between 1st June 2005 and 1st June 2006
Exposures	•Predictors for not attaining target BP •Patient demographics, clinical characteristics, cardiovascular risk factors, comorbidity
Outcome	•<80 years old: <140/90 mmHg •>80 years old: <150/90 mmHg
Follow up	•Average BP at 6-18 months follow-up •Attainment of NICE 2019 guideline BP targets

3. Results

Table 1. Study Population Description

	All Patients (9,939)	BP Target attainment	BP Target Non-Attainment
Women (n,%)	5,418 (54.5)	2,233 (51.8)	3,171 (56.60)
Age (years) Median [IQR]	73 [69.0, 79.0]	75 [69.0, 81]	72 [68.0, 77.0]

Figure 1. BP Target Attainment

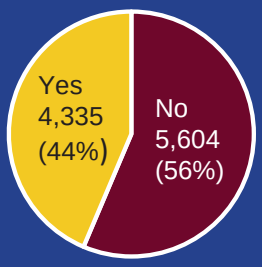
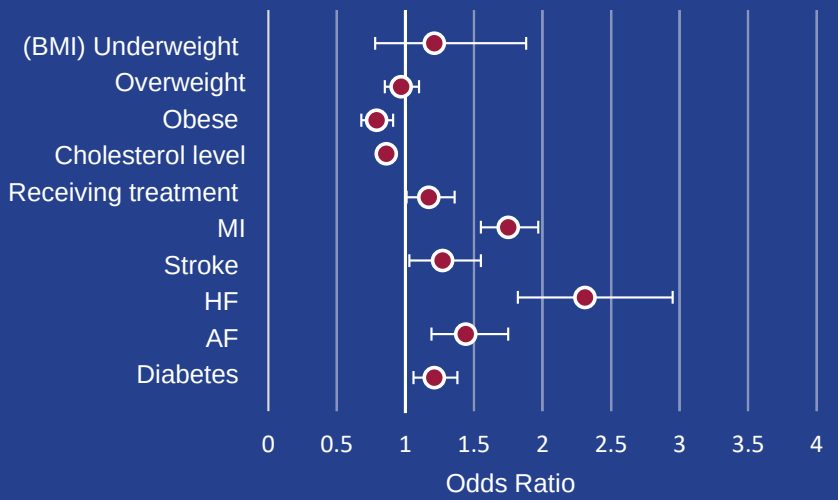


Figure 2. Which Factors predict attaining BP Targets? Multivariate Analysis



4. Conclusion

- Less than half attained target BP
- Non-attainment predictors were CVD risk factors (obesity and high cholesterol)
- BP target attainment predictors were older age, care home residence, antihypertensive treatment and CVD
- Predictors may help identify a sub-group for whom a different or more intensive approach to hypertension management is required

CQ - Clinical Quality - CQ - Clinical Effectiveness

[Poster 458] AF and anticoagulation- is there a justification for withholding therapy in patients who are at high risk of falling?

Ryan Wiltshire

Salford Royal Hospital

Introduction:
Atrial Fibrillation (AF) is responsible for 20% of ischaemic strokes in the UK. If patients with AF are treated with effective oral anticoagulant (OAC) therapy their risk of having an ischaemic stroke is reduced by 60%. A common justification for not anticoagulating AF patients is the perception that bleeding risk secondary to falls outweighs the benefits of anticoagulation. However, evidence suggests that whilst falls risk is an independent risk factor for ischaemic stroke it does not confer an increased risk of significant bleeding for the majority of patients in this cohort. Therefore, many patients who are currently not anticoagulated due to falls risk would benefit from being started on OAC. The aim of this clinical audit is to investigate how many patients at a GP surgery with AF were being withheld treatment due to high falls risk and to establish if this was justified.

Method:
A search of the patient records was conducted for patients with AF and a CHADS2VASC score of ≥ 1 for men and ≥2 for women.
Results:
182 patients were identified. Of these 160 patients were on appropriate OAC. 9 patients (5%) were not being treated with OAC due to high falls risk. Of the 9 patients who were not on OAC due to falls risk none of these patients had been diagnosed with an intracranial bleed secondary to a fall.
Conclusions:
OAC should not always been stopped as standard in AF patients due to perceived high bleeding risk secondary to falls. Multiple factors need to be taken into consideration when deciding if OAC should be stopped in this cohort of patients including the frequency, mechanism and injuries sustained in their falls. These factors should be used in conjunction with their CHADS2VASC and HAS-BLED score when deciding if OAC is appropriate.