PrescQIPP Community Interest Company

Medication and falls

This bulletin focuses on medication and falls. Falls and fall-related injuries are a common and serious problem for older people.[1] Whilst there can be many contributing factors,[1] the use of certain medications is recognised as a major and modifiable risk factor for falls.[2]

The human cost of falling includes distress, pain, injury, loss of confidence, loss of independence and mortality. Falling also affects the family members and carers of people who fall. Falls are estimated to cost the NHS more than £2.3 billion per year. Falling, therefore has an impact on quality of life, health and healthcare costs.[1]

Recommendations

- Older people in contact with healthcare professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the fall(s).
- Older people who present for medical attention because of a fall, or report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment, by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service.
- The use of certain medications is recognised as a major and modifiable risk factor for falls and consequently, a full medication review should form part of the assessment for people with a history of falls.
- Medication review should include modification or withdrawal of fall-risk-increasing drugs (FRIDs), where possible.
- STOPPFall (Screening Tool of Older Persons Prescriptions in older adults with high fall risk) is a screening tool that aims to support prescribers in deprescribing FRIDs and outlines where to consider withdrawal of medication or whether a stepwise withdrawal is needed and whether monitoring is advised after deprescribing.
- The use of STOPPFall as a screening tool is suggested to identify FRIDs when performing a medication review in older fallers, as part of a multifaceted strategy.
- In addition, it is suggested that an older person's history of falls and/or risk of falling should be carefully considered before prescribing FRIDs as defined in the STOPPFall.

National Guidance

The National Institute for Health and Care Excellence (NICE) published a Clinical Guideline in 2013 entitled 'Falls in older people: assessing risk and prevention'.[1]

This guideline states that older people (aged 65 years or over) in contact with healthcare professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the fall(s).[1]

In addition, older people who present for medical attention because of a fall, or report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial

falls risk assessment, by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service.[1]

It is also a requirement under the 2021/22 Network Contract Directed Enhanced Service Specification that each Primary Care Network (PCN) must use appropriate tools to identify and prioritise patients who would benefit from a structured medication review (SMR), which must include those with severe frailty (electronic frailty index, eFI, score of >0.36), who are particularly isolated or housebound patients, or who have had recent hospital admissions and/or falls.[3]

The Scottish Government Polypharmacy Model of Care Group have developed guidance on preventing inappropriate polypharmacy at every stage of the patient journey, for both the initiation of new and the review of existing treatments. This includes a review of the clinical evidence of medicines most implicated in falls and information on deprescribing.[4]

In Wales, the All Wales Medicines Strategy Group (AMWSG) document entitled Polypharmacy Guidance for Prescribing provides information on medication review and medicines particularly associated with falls.[5]

Falls and fall-related injuries are a common and serious problem for older people. People aged 65 and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year.[1]

The use of certain medications is recognised as a major and modifiable risk factor for falls.[5]

EUGMS (European Union Geriatric Medicine Society)

In 2018, the EUGMS Task and Finish Group on FRIDs published three systematic reviews and meta-analyses looking at 'cardiovascular drugs', 'psychotropic drugs' and 'others'.[2,6,7]

Of the cardiovascular medications studied, it was shown that loop diuretics are significantly associated with increased fall risk, whereas beta-blockers are significantly associated with decreased fall risk. Digitalis and digoxin may increase the risk of falling, and statins may reduce it. For the majority of cardiovascular medication groups, outcomes were inconsistent.[2]

Furthermore, studies indicate that specific drug properties, such as the selectivity of beta-blockers, may affect fall risk, and drug-disease interaction also may play a role.[2]

Of the psychotropic medications studied, antipsychotics, antidepressants, and benzodiazepines are consistently associated with a higher risk of falls. However, it is unclear whether specific subgroups such as short-acting benzodiazepines and selective serotonin reuptake inhibitors are safer in terms of fall risk.[6]

Of the other medications studied in the third meta-analyses, opioid and antiepileptic use and polypharmacy were significantly associated with increased risk of falling. Long-term use of proton pump inhibitors and opioid initiation might increase the fall risk.[7]

Future research is necessary because the causal role of some medication classes as FRIDs remains unclear, and the existing literature contains significant limitations.[7]

Medication review

Falls often result from interacting risks[8] and falls require a multifactorial assessment that includes, as part of it, a full medication review with modification or withdrawal, as appropriate.[1] One of the prominent risk factors is the use of FRIDs.[8]

Healthcare professionals are often reluctant to deprescribe FRIDs and there has been no consensus on which medications are considered as FRIDs, despite several systematic reviews.[8]

To support clinicians in the management of FRIDs and to facilitate the deprescribing process, STOPPFall (Screening Tool of Older Persons Prescriptions in older adults with high fall risk) and a deprescribing tool have been developed by a European expert group who agreed on 14 medication classes to be included.[8]

For any medication, withdrawal should always be considered where there is no indication for prescribing or if a safer alternative is available.[8]

In addition, the deprescribing guidance for the STOPPFall medication classes outlines in which cases to consider withdrawal, whether stepwise withdrawal is needed and whether monitoring is advised after deprescribing.[8]

STOPPFall medication classes:[8]

- Benzodiazepines and benzodiazepine-related drugs
- Antipsychotics
- Opioids
- Antidepressants
- Antiepileptics
- Diuretics
- Alpha blockers used as antihypertensives or for prostate hyperplasia
- Centrally acting antihypertensives
- Sedative antihistamines
- Vasodilators in cardiac disease
- Overactive bladder and incontinence medications

The use of STOPPFall as a screening tool is suggested to identify FRIDs when performing a medication review in older fallers, as part of a multifaceted strategy.[8]

In addition, it is suggested that an older person's history of falls and/or risk of falling should be carefully considered before prescribing FRIDs as defined in the STOPPFall.[8]

Decision trees to support this review are also available as an online tool via https://kik.amc.nl/falls/decision-tree/

Relevant deprescribing algorithms can also be found at: https://www.prescqipp.info/our-resources/webkits/polypharmacy-and-deprescribing/

The PrescQIPP IMPACT bulletin provides additional advice on clinical risk, deprescribing priority and withdrawing and/or tapering medicines.

Deprescribing guidance for FRIDs

Table 1 summarises the deprescribing guidance for STOPPFall medication classes,[8] as well as listing the commonly used medications within each group.[9] STOPPFall results will be included in the draft criteria of the anticipated STOPP/START version 3 to be further validated by the STOPP/START panellists.[8]

Table 1. Deprescribing guidance for STOPPFall medication classes

*Support for prescribing for mental health conditions in older people can be found at: https://www.england.nhs.uk/wp-content/uploads/2017/09/practice-primer.pdf

Medication class[8]	Commonly used medications within the class[9]	Consider withdrawal if any of the following occur[8]	Is stepwise withdrawal needed?[8]	Monitoring after deprescribing?[8]
Benzodiazepines and benzodiazepine-related drugs*	Chlordiazepoxide, clonazepam, diazepam, flurazepam, lorazepam, lormetazepam, nitrazepam, oxazepam, temazepam, zolpidem, zopiclone	• Daytime sedation, cognitive impairment, or psychomotor impairments • If given for both indications: sleep and anxiety disorder	In general, needed	• Monitor: anxiety, insomnia, agitation • Consider monitoring: delirium, seizures, confusion
Antipsychotics*	Amisulpiride, aripiprazole, chlorpromazine, fluphenazine, haloperidol, olanzapine, quetiapine, risperidone, sulpiride, trifluoperazine	• Extrapyramidal or cardiac side effects, sedation, signs of sedation, dizziness, or blurred vision • If given for behavioural and psychosocial symptoms of dementia (BPSD) or sleep disorder, possibly if given for bipolar disorder	In general, needed	• Monitor: recurrence of symptoms (e.g. psychosis, aggression, agitation, delusion, hallucination) • Consider monitoring: insomnia
Opioids	Buprenorphine, codeine (including co-codamol, co-dydramol, dihydrocodeine), fentanyl, methadone, morphine, oxycodone, tramadol	• Slow reactions, impaired balance, or sedative symptoms • If given for chronic pain, and possibly if given for acute pain	In general, needed	• Monitor: recurrence of pain • Consider monitoring: musculoskeletal symptoms, restlessness, gastrointestinal symptoms, anxiety, insomnia, diaphoresis, anger, chills

Medication class[8]	Commonly used medications within the class[9]	Consider withdrawal if any of the following occur[8]	Is stepwise withdrawal needed?[8]	Monitoring after deprescribing?[8]
Antidepressants*	Amitriptyline, citalopram, clomipramine, dosulepin, doxepin, duloxetine, fluoxetine, imipramine, isocarboxazid, lofepramine, mianserin, mirtazapine, nortriptyline, paroxetine, phenelzine, promazine, sertraline, tranylcypromine, trazodone, trimipramine, venlafaxine	• Hyponatremia, orthostatic hypotension (OH), dizziness, sedative symptoms, or tachycardia/arrhythmia • If given for depression (depends on symptom-free time and history of symptoms), or if given for sleep disorder, and possibly if given for neuropathic pain or anxiety disorder	In general, needed	• Monitor: recurrence of depression, anxiety, irritability and insomnia • Consider monitoring: headache, malaise, gastrointestinal symptoms
Antiepileptics	Carbamazepine, gabapentin, lamotrigine, levetiracetam, phenobarbitone, phenytoin, pregabalin, sodium valproate, topiramate	• Ataxia, somnolence, impaired balance, or possibly dizziness • If given for anxiety disorder or neuropathic pain	Consider	• Monitor: recurrence of seizures • Consider monitoring: anxiety, restlessness, insomnia, headache
Diuretics	Bendroflumethiazide, bumetanide, chlorthalidone, furosemide, indapamide, metolazone	• OH, hypotension, or electrolyte disturbance and possibly urinary incontinence • Possibly if given for hypertension	Consider	• Monitor: heart failure, hypertension, signs of fluid retention
Alpha blockers used as antihypertensives or for prostate hyperplasia	Alfluzosin, doxazosin, indoramin, prazosin, tamsulosin, terazosin	• Hypotension, OH, or dizziness	Consider for antihypertension Generally, not needed for prostate hyperplasia	Antihypertensive: • Monitor: hypertension • Consider monitoring: palpitations, headache Prostate: • Monitor: return of symptoms
Centrally acting antihypertensives	Clonidine, methyldopa, moxonidine	• Hypotension, OH, or sedative symptoms	Consider	• Monitor: hypertension

Medication class[8]	Commonly used medications within the class[9]	Consider withdrawal if any of the following occur[8]	Is stepwise withdrawal needed?[8]	Monitoring after deprescribing?[8]
Sedative antihistamines	Chlorphenamine, hydroxyzine, promethazine, alimemazine (trimeprazine)	• Confusion, drowsiness, dizziness, or blurred vision • If given for all indications: hypnotic/ sedative, chronic itch, allergic symptoms	Consider	• Monitor: return of symptoms • Consider monitoring: insomnia, anxiety
Vasodilators in cardiac disease	ACE inhibitors (including captopril, enalapril, fosinopril, imidapril, lisinopril, perindopril, quinapril, ramipril), glyceryl trinitrate, hydralazine, isosorbide mononitrate, minoxidil	• Hypotension, OH, or dizziness	Consider	• Monitor: symptoms of Angina Pectoris
Overactive bladder and incontinence medications	Oxybutynin, solifenacin, tolterodine	• Dizziness, confusion, blurred vision, drowsiness, or increased QT-interval	Consider	• Monitor: return of symptoms

Summary

Falls and fall-related injuries are a common and serious problem for older people. People aged 65 and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year.[1] The use of certain medications is recognised as a major and modifiable risk factor for falls.[2]

To support clinicians in the management of FRIDs and to facilitate the deprescribing process, STOPPFall (Screening Tool of Older Persons Prescriptions in older adults with high fall risk) and a deprescribing tool have been developed.[8] This is recommended to identify FRIDs when performing a medication review in older fallers, as part of a multifaceted strategy, and to evaluate the risks versus benefits of starting FRIDs as defined in the STOPPFall for older people at risk of, or with a history of falls.[8]

References

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Additional PrescQIPP resources

Briefing	https://www.prescqipp.info/our-resources/bulletins/bulletin-300-medication-and-falls/
Implementation tools	

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