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Could herbal medicine alternatives reduce overuse of benzodiazepines in older adults? Thoughts on the EMPOWER trial

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Abstract

Inappropriate prescribing of benzodiazepines is very common, despite known risks. This is a significant problem in older adults with further pressure being placed on health care services as this population increases. This presents an opportunity for herbal medicine to offer safe and effective alternatives. Anxiety and insomnia are the main conditions treated with benzodiazepines. Traditional and modern evidence supports the use of herbal medicine for the treatment of these conditions. In particular, Passiflora incarnata has shown strong potential as a substitute for benzodiazepines with minimal or no side effects. The challenge is in how to create awareness about these alternatives to provide patients with a choice. A patient-centred approach using a shared decision making model (EMPOWER trial) has been effective in benzodiazepine withdrawal for older adults. Including herbal medicine in the discussion would provide patients with further options for safe and simple alternatives.

Keywords: Inappropriate prescribing, benzodiazepines, herbal medicine, Passiflora incarnata, passionflower, ageing population, patient-centred, shared decision making

Introduction

Inappropriate prescribing of medication – when potential risks outweigh potential benefits, and safer therapeutic alternatives exist that have similar or superior efficacy[1] – has been identified as a major health issue worldwide.[2] Risks of side effects and adverse drug reactions are increased, which can lead to serious injury, hospitalisation and even death. The elderly population are particularly vulnerable due to their decreased physical functioning, age-related illnesses and high incidence of polypharmacy. They are the most likely age group to be taking inappropriate medication.[1]

The use of benzodiazepines is common in older populations, ranging from 5% to 32% in community-dwelling older adults,[3] with incidence being much higher in aged care facilities.[4] Benzodiazepines are a class of drugs with sedative, hypnotic and anxiolytic actions and are mainly used to treat insomnia and anxiety disorders. Use of these drugs in older people has been shown to elicit cognitive deficit leading to increased falls, hip fractures, car accidents and hospitalisations.[5, 6] Hip fractures are serious incidents in the elderly, commonly leading to disability and death.[7] Psychological dependence and addiction is a major issue with benzodiazepines, highlighting the importance of early intervention.[8-10]

Anxiety and insomnia in older adults

Benzodiazepines are prescribed to older adults primarily to treat anxiety and insomnia.[10] These conditions occur at a higher rate in older adults for a number of reasons such as social isolation and lack of family support.[11] The current treatment and management of anxiety in Australia has been identified as sub-optimal[12] due to under-diagnosis and treatment not being specific to the type of anxiety condition. The current treatment options that are most commonly recommended are pharmacotherapy and psychological therapy (mainly cognitive behavioural therapy).[12]

Similarly, it has been well-established that insomnia is under-diagnosed and inadequately in Australia.[13] Re-Awakening Australia, a national report commissioned by the Sleep Foundation in 2011, identified insomnia as having a significant economic impact for the Australian healthcare system.[14] Insomnia occurs at a higher rate in older adults, and for women, there is a sharp increase after age 54.[15] It often precedes depression in older adults.[16]

In an Australian report using nationally representative data, it was found that treatment seeking for insomnia is low as it is often not perceived as a medical problem by both the public and clinicians.[15] There is a general lack of awareness about treatment options, particularly those provided by complementary and alternative medicine (CAM). This is supported by a population survey in the United States indicating that only 4.5% of people with insomnia report using CAM for sleep.[17] A small proportion of herbal therapy users in Australia cite insomnia as a reason for use.[15] This points to a significant opportunity for increasing awareness of CAM therapies for treating insomnia.

A patient centred approach to benzodiazepine withdrawal: the EMPOWER trial

The EMPOWER (Eliminating Medications through Patient Ownership of End Results) trial has tackled the issue of inappropriate prescribing of benzodiazepines using a patient-centred approach. The study was designed to examine the effect of a direct-to-consumer educational intervention on benzodiazepine therapy discontinuation in community-dwelling older adults.[3] Adults living in aged care facilities were not included, which is a limitation of this study considering the high risk of inappropriate prescribing in these facilities.

The intervention consisted of an eight-page booklet mailed to participants.[18] The booklet was customised according to the type of benzodiazepine the patient was using and presented information about benzodiazepine-induced harms. It included a range of features designed to promote cognitive dissonance in the participant, aiming to initiate a discussion between patient and physician. The authors of the study hoped to imitate the success of individually targeted anti-smoking campaigns by empowering chronic users with knowledge about risks.[18]

The objective of the education tool was to move away from a 'top-down', didactic approach frequently used in patient care, and rather present information with the intention of promoting a dialogue between patient and physician. Constructivist learning theory and self-efficacy theory informed this active learning approach. These theories maintain that users create new knowledge in order to make sense out of the information presented to them and ultimately foster their own selecting and organising of the material.

The primary outcome of the EMPOWER trial was to evaluate the effectiveness of the educational intervention by measuring the rate of benzodiazepine discontinuation at 6 months.3 This was measured by pharmacy renewal profiles supplied by the patient's pharmacist along with patient reported outcomes in phone interviews. The final results showed a significant outcome. At 6 months, 27% of intervention group had discontinued benzodiazepine use compared with 5% of the control group.[3] The effect of the intervention was robust across age, indication, dose and duration of benzodiazepine use. However, a limitation of this evaluation was the short 6-month time frame for outcome reporting as relapse may occur after 6 months and is more common among high dose users.[19] Interestingly, a qualitative study on the prevention of relapse for high-dose benzodiazepine users found that patients' perception of treatment approaches played a major role in preventing relapse.[20] This highlights the potential of benzodiazepine users calling upon a range of health modalities with different treatment approaches to suit their individual needs.

Alternative herbal therapy

The Herbal Approach

The EMPOWER trial offers some insight into a shared decision making model for discontinuing benzodiazepines. The purpose of the educational intervention was to prompt a discussion between patient and physician. However, once this dialogue takes place, what kind of information can a physician offer as alternative treatment?

There are a range of herbal medicines that are highly effective in treating anxiety and insomnia. In particular, the following herbs are frequently prescribed for these conditions: *Piper methysticum, Passiflora incarnata, Valeriana officinalis, Melissa officinalis, Scutellaria lateriflora, Matricaria recutita* and *Eschscholzia californica*.[21, 22] Specific combinations of herbs have also been used to treat insomnia such as V*aleriana officinalis* and *Humulus lupus*,[23] however, one of these herbs – *Passiflora incarnata* – may be particularly useful as an alternative to benzodiazepine medication.

Passiflora incarnata

Passiflora incarnata (passionflower) has great potential to assist older adults in managing their anxiety and insomnia. There is an emerging body of research that supports the efficacy of passionflower for the treatment of anxiety and insomnia.[24-28] Passionflower's unique combination as an anxiolytic, hypnotic and sedative is relevant to this group of older adults suffering from anxiety and insomnia. It has been tested specifically for drug withdrawal with benzodiazepines and also opiate drugs in clinical trials.[27, 28] Passionflower has an excellent safety profile, making it highly suitable for older adults who are predisposed to polypharmacy.[22]

Traditional use and history

Passiflora incarnata is a member of the Passifloraceae family, which is native to North, Central and South America.[29] It has been used for many years in the Americas and Europe as a remedy for sleep and anxiety disorders,[30] and was introduced to Europe by the Spanish conquistadors in the fifteenth century. The flower of the plant is unusually beautiful and was given the name 'Passion Flower' due to its resemblance to the crown of thorns placed on Christ's head and symbolic relevance to the crucifixion or 'Passion of the Christ'.[22] Traditionally, the aerial parts are used for medicinal use; however, recently the leaves in particular have been identified as having the strongest anxiolytic action.[30]

Modern evidence

More recently, clinical trials have investigated the efficacy and safety of passionflower as a treatment for general anxiety,[27] preoperative anxiety,[24, 26] sleep quality[22] and opiate withdrawal symptoms.[28] The most frequently discussed trial compared the effectiveness of passionflower to the benzodiazepine oxazepam.[27] This

was a randomised, double blind, controlled trial where participants took a dose of 45 drops of a passionflower extract daily. Further details about the extract were not provided which is a limitation of this particular study. It involved 32 subjects diagnosed with generalised anxiety disorder (GAD), aged between 18 and 47 years of age. The results of the trial showed that passionflower was as effective as oxazepam in treating GAD. Furthermore, the herbal treatment had a lower incidence of job impairment side effects compared to oxazepam. This shows significant potential and raises the question as to whether a larger trial could be conducted targeting an older population who are more likely to be taking benzodiazepines.

In relation to sleep disorders, a double blind, placebo controlled trial was conducted by Monash University in Australia to test the efficacy of a passionflower tea on sleep quality in 41 participants.[25] The trial found significant improvement in sleep quality for those taking the passionflower tea as compared to placebo. The infusion was based on 2g of dried passionflower aerial parts, infused in 250ml of boiling water for 10 minutes and taken one hour before bed. This trial, however, was based on healthy adults and excluded those with extreme sleep difficulties. It may therefore not be generalisable to those suffering from insomnia; nevertheless, the significant results are promising and warrant further larger trials specifically for insomnia sufferers.

A recent systematic review made a strong argument for further rigorous research to be conducted on passionflower.31 Analysing all clinical trials to 2010, it identified important details being excluded such as insufficient information about drug extract ratio and unclear placebo definitions. This points to the larger issue facing the integration of traditional herbal medicine with modern science, whereby the dosages used in clinical trials do not always match doses prescribed in clinical practice.[32] This is becoming more important as clinical interest in herbal medicine increases worldwide.

A public health campaign educating both the public and clinicians about alternatives to benzodiazepines in the treatment of anxiety and insomnia would be beneficial. An analysis of a campaign in Europe that aimed to decrease benzodiazepine use found that the campaign was only effective when an alternative therapy was offered to replace the benzodiazepine.33 Information about herbal alternatives to benzodiazepines could be a valuable addition to an intervention that aims to decrease benzodiazepine use in older adults. Further information about the variety of health modalities and therapies offering alternative treatments would be ideal as lack of awareness has been highlighted.

Safety and polypharmacy

Providing herbal medicines to older adults who are predisposed to polypharmacy is problematic. The risk of herb-drug interactions is increased due to the large number of medications taken by this group. Passionflower has a good safety profile with no reports of interactions between other drugs to date.[22] Products implicated in case reports have rarely been tested, and adverse effects may be due to adulterants, rather than to passionflower itself.[34] The theoretical additive effect of passionflower with benzodiazepines and other sedatives needs to be considered when prescribing.

Potential issues of herb drug interactions can be managed through open communication with the patient about current medications as well as pharmacists, physicians and psychiatrists. An appropriate tapering protocol, monitored by a medical professional, is necessary for those wishing to discontinue benzodiazepines. A patient centred approach based on shared decision-making is an effective way to educate benzodiazepine users about associated risks and tapering protocols.[3]

Conclusion

There is a wide range of herbs that have been effective in the treatment of nervous system conditions for thousands of years and clinical evidence is emerging to support this. This report has outlined great promise in the use of *Passiflora incarnata* for the treatment of anxiety and insomnia in older adults. With awareness increasing about the detrimental effects of benzodiazepines, this is an important opportunity for herbal medicine to offer a safe alternative. Indeed, it is necessary at a time when the health of older adults is a global priority. With the ageing population increasing, significant demand is placed on health care services to provide suitable care. Reduction in the incidence of benzodiazepine-induced harm will make a significant impact on the health and wellbeing of older adults and lessen the burden on health care services. A patient centred approach can empower patients through discussion of multiple treatment options from a range of health modalities. Herbal medicine and passionflower in particular, is a valuable addition to discussions about alternative treatment therapies.

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