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Potential of *Melissa officinalis* L. essential oil as potential treatment for agitation in people with severe dementia

Agitation is a common clinical challenge; it often precedes the diagnosis of common age-related disorders of cognition such as Alzheimer's disease. More than 80% of people who develop Alzheimer's eventually become agitated or aggressive. Agitation also accompanies dementia, it has been estimated that agitated behavior occurs in 70-90% of the patients with dementia at some point during their illness. An ideal agent for the acute treatment of agitated patients should be easy to administer and not traumatic, provide tranquilization without excessive sedation, have a rapid onset of action and have low risk for significant adverse reactions and drug interactions. Currently available pharmacologic treatments for agitation do not fulfill all of these criteria but there are significant unmet needs for novel anti-agitation treatments. Several plant species are used for their effect on symptoms such as anxiety, restlessness and excitability these include *Melissa officinalis*, commonly known as lemon balm a member of the mint family, has been considered for many centuries as a calming herb. It was used as far back as the middle ages to reduce stress and anxiety and promote sleep. In order to elucidate the pharmacological basis for *Melissa* actions, a pharmacological screen has been conducted using radio ligand binding focusing on a range of ligand-gated ion channels, in rat cortical membranes. *Melissa* oils were sourced from four separate authenticated suppliers. Interactions of the oils with both G-protein coupled receptors (5-HT_{1A}, 5-HT_{2A}, muscarinic M1 and histamine H3) and ligand-gated ion channel receptors (NMDA, nicotinic and GABAA channel, agonist and benzodiazepine sites) implicated in agitation in severe dementia have been examined.

Biography

Sawsan Abuhamdah is a Jordanian registered Pharmacist, completed her PhD from Durham University, UK and Postdoctoral studies from Granada Medical School, Department of Pharmacology, Spain and has won Postdoctoral Fulbright Research Award at the University of Toledo, Department of Pharmacology and Experimental Therapeutics, USA. Presently, she is working as the Deputy Dean, College of Pharmacy, Al Ain University of Science and Technology, Abu Dhabi, UAE. She has published many original research articles in peer-reviewed journals and participated in the preparation of many symposium abstracts. She is also a Member of the British Pharmacological Society (BPS), British Neuroscience Association (BNA), Sigma Phi Sigma Pharmaceutical Sciences Honor Society, University of Toledo, USA and Jordan Pharmaceutical Association. She has been serving as an Editorial Board Member of reputable pharmaceutical journals.

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