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A systematic review and meta-analysis of the effect of melatonin, melatonin agonist and melatonin precursor on delirium prevention in the elderly medical and surgical inpatients

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Background and aims: Melatonin is a pineal gland hormone synthesised within the pinealocytes. It is believed to have a protective effect against delirium. This study aimed to investigate the effects of melatonin, melatonin receptor agonist and melatonin precursor on delirium prevention in the elderly medical and surgical patients.

Methods: Controlled trials of melatonin, melatonin agonist (ramelteon) and melatonin precursor (tryptophan) were included. A meta-analysis with a random effects model was performed.

Findings: 7 studies (1515 participants) met the inclusion criteria. Among medical patients, delirium risk reduced by


63% with Melatonin, 88% with Ramelteon and insignificantly with tryptophan. Hallucination and nightmare were more prevalent in patients taking melatonin.

Interpretation: Ramelteon and Melatonin were associated with a fall in delirium incidence. But its benefit needs to be balanced against its potential side effects of hallucinations and nightmares.

Speaker Biography

Kay Khaing has completed MBBS at the age of 25 years from Institute of Medicine 2, Yangon, Myanmar and Master of Medicine (Clinical Epidemiology) from University of Sydney in 2016. She has completed Geriatric Fellowship in 2017 and is working as a Geriatrician

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