

12th Nursing and Healthcare Congress

October 03-05, 2016 Vancouver, Canada

Polymer delivery systems augment polyphenol efficacy, for treating schizophrenia

Wendy Laupu

James Cook University, Australia

The incorporation of drug delivery technologies appears to enhance the potential of polyphenols; to advance the field of nutritional neurobiology. Pre-clinical in vivo and in vitro evidence suggests that polyphenols may modulate brain functioning; germane to mental illness. A literary review examined the available evidence for efficacy of polyphenols, to achieve this claim. Studies whose design enabled the reporting of efficacy were considered. Randomized controlled trials or open-labeled studies were assessed. A pooled response demonstrated a positive signal for the use of bioavailable polyphenols to treat mental illness; beyond the effect size of current antipsychotic drugs. However, a very large effect size was achieved for a pilot study examining the efficacy of mangosteen extract in schizophrenia. This mangosteen extract is presumed to have crossed the blood brain barrier to modify clinical symptom domains and afford neuroprotection. This large effect size is incongruent with the expected low bioavailability of mangosteen extract; given its large molecular size and water solubility. We can speculate the enhanced bioavailability stems from the use of polymer technology during the spray drying process; used to preserve the active ingredient, alpha-mangostin. If this is so, the use of polymer technology to deliver polyphenol treatments has the potential to treat afflictions beyond schizophrenia. Mental illnesses and potentially degenerative, acquired and neurodevelopmental brain disorders (including Downs' syndrome) may benefit in some way from the use of this technology. However, much work is required to translate this potential to clinical outcomes.

Biography

Wendy Laupu has completed her PhD from James Cook University. She is an adjunct Research Fellow in the Centre for Nursing and Midwifery Research at James Cook University. She is interested in non-pharmacological approaches for treating brain disorders.

wendy.laupu1@jcu.edu.au

Notes: