

Alternative splicing of acid sphingomyelinase in major depression

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A recently developed pathogenic model of major depressive disorder (MDD) involves disturbed neurogenesis in the hippocampus, where the acid sphingomyelinase (ASM)/ceramide system plays an important role and is proposed as a molecular target for antidepressant action. ASM hydrolyzes sphingomyelin and generates the lipid messenger ceramide, which mediates a variety of stress-related cellular processes. The pathological effects of dysregulated ASM activity are evident in several neuro-psychiatric diseases. We investigated alternative splicing as a novel mechanism for regulating cellular ASM activity in a cell culture model and analyzed the ASM splicing pattern in peripheral blood cells of MDD patients. The ASM splice variants were catalytically inactive in biochemical in vitro assays, but they decreased the cellular ceramide content and exerted a dominant-negative effect on ASM activity in physiological cell models. Alternative splicing of ASM is of functional significance for the cellular stress response and represents a mechanism for maintaining constant levels of cellular ASM enzyme activity. ASM alternative splicing events occurred significantly less frequently in MDD patients compared to healthy subjects. After antidepressant treatment, the frequency of alternatively spliced ASM isoforms changed depending on the type of antidepressant drug. Our research indicates that ASM alternative splicing pattern could be a biological target with diagnostic relevance and could serve as a novel biomarker for MDD.

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Effect of routine spirituality practice on mental health of older population

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Introduction: Spiritual practice has long been in vogue in different parts of the world. This study is an attempt to determine its impact on mental well being.

Aims: To assess the effectiveness of spirituality practice on mental health of a geriatric population.

Participant Inclusion Criteria: (1) Age: 65-75 years. (2) Gender: 30 Males & 30 Females & (3) Existence of an Informed Consent of each participant of the study.

Intervention: Trained spirituality practitioner was introduced who advocated daily Spirituality practices in the form of yoga, meditation and regular prayers. Periodic assessment was done at 0, 6 & 12 weeks from the date of commencement of the study.

Result: The baseline WEMWBS score improved considerably after third assessment in about 70% of the participants which is quite significant because none of the participant had been regular follower of spirituality practices in their lives before present study. Statistically there was overall marginal increase in WEMWBS score among the female participants, male candidates over and above the increase in score although the significance of which is beyond the purview of the present study.

Discussion: It is a well established fact that spiritual practice helps in mental well being. The present study reinforces this belief. Routine and regular spiritual practices, even if pursued at a later age in life, can have a demonstrable positive effect on mental well being. So it could be concluded with reasonable certainty that in a society stiffened with stress, spirituality should be a regular practice.

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