

Role of Magnesium in Mental Health

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Abstract -

According to WHO around 264 million people are suffering from depression, 45 million from bipolar and 20 millions are from schizophrenia. Nutrition, environment, genetics and social stress are some cofactors which contribute psychological and mental disorder. Medication, counseling and cognitive therapy are still better way to overcome these problems. Various studies show that apart from Omega-3 fatty acid, VitaminD and tryptophan intake of magnesium dramatically changes the mood and restores prior condition .

Key words - Anxiety, depression, schizophrenia.

Introduction -

Brain structure and its functioning is a very much complex phenomenon. Some of the chemicals, called neurotransmitters play a vital role in regulating all body functions. Serotonin and Dopamine also known as happy hormones create excitement and responsible for refreshing mood. Whereas high level of 'Cortisol' swings our mood towards negative and abnormal behaviour results into stress and sadness ultimately transforms into a psychodisorder - Depression.

According to Larry B. Goldstein , FAAN, Chairman of neurology Kentucky (UK), magnesium is an essential element for normal brain functioning. Intake of magnesium helps those who are facing anxiety, restlessness, insomnia and depression. Mal functioning of thyroid may also cause depression like symptoms. Magnesium induces secretion of thyroxine hormone.

Functioning of Magnesium -

In 1968 Wacker and Parisi reported that magnesium deficiency can result depression, seizures and mood disorder. Low magnesium will create muscle cramps, arrhythmia. Excessive release of 'Cortisol' eventually makes imbalanced hormonal secretions. Magnesium regulates the action of N-methyl-D-Aspartate (NDMA) glutamate receptors. These are responsible in memory and learning process. It is essential to perform correct functioning of human cells neurons, enzyme reactions, synapses formation and in regulation of serotonergic, dopaminergic and cholinergic transmission. Ionised magnesium has highest biological activity in transmission and intracellular signal transduction. It is also a key mediator of efficacy of antipsychotic drugs. It's deficiency can cause over excitation and stimulation of cells which leads to cells death. This may produce seizures, stroke, parkinsons and Alzheimer's disease.

Magnesium blocks action of glutamate in NMDA thereby reducing the risk of over functioning of cells.

Material and Method -

Data collected from various sources reveal that, intake of magnesium supplement produces desirable positive effects in patients suffering from psychodisorder.

- Randomised clinical trials published in PLOS one, showed that magnesium chloride is effective for depression in seniors with type 2 diabetes.
- Use of magnesium citrate decreased depression into patients having fibromyalgia.
- A 23 year old woman became depressed after brain injury, after intake of magnesium she became normal.
- A 59 year old 'Hypomanic-depressed' person treated with anti psychotic drugs gradually developed anxiety, insomnia and suicidal thoughts. Anti - depressant drugs did nothing. After giving dose of 300mg magnesium glycinate with every meal resulted surprising effects. His sleep was recovered, anxiety & depression were reduced to some extent. [Eby's case study].

Conclusion -

Magnesium is a vital micronutrient essential to maintain brain functioning via balancing neurotransmitters. We are normally missing it in our diet. Soil and municipal water supply is also devoid of elemental magnesium. Therefore leading the increased percentage of people with mental and psychological disorder. Low dietary intake is associated with certain health conditions like hypertension, cardiac death, reduced insulin and thyroxine sensitivity. Thus regular intake of magnesium could be an important dietary factor in prevention and treatment of psycho and mental disorder.

Source -

Whole grains, beans, leafy green vegetables, banana, potatoes, pumpkin seeds are rich source of magnesium. Daily recommended dose for men is 400mg and for women 300mg per day.

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