International Journal of Advanced Research and Development
ISSN: 2455-4030
Impact Factor: RJIF 5.24
www.advancedjournal.com
Volume 2; Issue 6; November 2017; Page No. 704-706

Serum magnesium and uric acid levels in strokes: A way of reduce the risk

T Hemalatha
Demonstrator, Department of Bio-Chemistry, Rangaraya Medical College, Kakinada. EG. Dt. Andhra Pradesh, India

Abstract
A stroke or Cerebro Vascular Accident (CVA) is when Blood flow to a part of your brain is stopped either by a blockage or the rupture of a Blood vessel. Stroke is the third common cause of death in the world after coronary heart disease and cancer especially in the elderly. Stroke also causes secondary medical problems, including dementia, depression, epilepsy, falls and fractures. Strokes are two main types' Ischemic stroke and Hemorrhagic stroke. An ischemic stroke is the most common and occurs when a blood clot blocks a blood vessel and prevents blood and oxygen from getting to a part of the brain. There are two ways that this can happen. One way is an embolic stroke, and other way is a thrombotic stroke. The hemorrhage may occur in any blood vessel in the brain, or it may occur in the membrane surrounding the brain.
Magnesium is a natural calcium antagonist and modulates vasomotor tone, blood pressure, and peripheral blood flow. Magnesium is thought to have the ability to prevent glutamate from causing food calcium in the cells. Patients with high serum uric acid levels had a significant increased risk of poor outcome. Increased UA levels were found to be associated with increased risk of ischemic as well as hemorrhagic strokes.
Control of risk factors could significantly reduce the incidence of stroke. Non modifiable risk markers for ischemic stroke include age, sex, family history and race. Modifiable risk markers for ischemic stroke include hypertension, cardiac disease, diabetes mellitus, hyperlipidemia, cigarette smoking, alcohol abuse, physical inactivity, transient ischemic attack. Improved detection, modification or control of risk factors could reduce the incidence of stroke and reduce the impact of this disease.

Keywords: stroke, blood, serum uric acid, brain, risk

Introduction
A sudden blockage of blood supply and oxygen to heart muscles due to a clot in any of the major arteries of the heart can result in myocardial in fraction. This is commonly known as a heart attack, which can be fatal if not treated immediately. If the patient survives, depending upon the seriousness of heart muscle damage and frequency of heart attacks, the heart functions less effectively in the long run. This may lead to poor blood supply to other parts of the body. This constitutes heart failure.
The current status of heart disease in India is alarming; with projection suggestive of that by the year 2020, the encumber of cardiovascular diseases in India will exceed that of any other country in the world.
It is estimated that 17.5 million people die each year in India from cardiovascular diseases, amounting to a staggering 31% of all deaths worldwide. 80% of all cardiovascular deaths are due to heart attacks and strokes, 74% of urban Indians are at risk of cardiovascular diseases.
There are estimated 40 million heart patients in India. Out of which 19 million reside in urban areas and 21 million in rural areas. This suggests heart diseases are fast becoming an epidemic in rural India and a structured solution is needed for combating the issue.

Warning symptoms of stroke
In India, awareness of the warning symptom of stroke among universal public is far from satisfactory. Surveys in the last decade revealed that about one-fourth of the urban and one-third of rural respondents who were unaffected had no knowledge of any warning symptom of stroke. Only 55% of the urban population was aware of one warning symptom of stroke; 16.2% were aware of two symptoms; and only 6.2% could identify three symptoms. Analysis has shown that improved socioeconomic status and higher education raise awareness of the warning symptoms of stroke for both rural and urban subjects.

Burden of Illness of Stroke
For chronic illnesses; only occurrence, incidence, and humanity data are not enough to express burden of illness, since disability from the disease is also an important burden parameter. The Disability-Adjusted Life Year (DALY) is currently the most important time-based measure of burden of a chronic disease incorporating both disability and mortality.

Heart Attacks for those in 40s rise
Heart attacks in those between 40 and 60 years have increased, according to the big data collection that is being carried out by cardiologists from crosswise the world. Presently, world estimates are driving the pattern of treatment and also preventive strategies, in India. Big data from hospitals in major Indian cities is currently being compiled so that the changes and trends in the tabulated.
A series of epidemiological studies carried out in India as part of this indigenous data compilation, shows that the prevalence

of coronary heart disease is between 7 and 13 per cent in urban areas and 2 to 7 percent in rural areas.
These epidemiological studies also show that there are 30 million cases of heart diseases in the country, and that 50 per cent of Indians 55 years suffer from heart attacks while 25 per cent of heart attacks occur under the age of 40.
Dr. Rahul potluri, senior cardiologist and researcher, says that this collection of data "the Indian population in the West, too, has shown a 20 per cent greater chronic total occlusion of heart blood vessels than seen in the local population,"

At High Risk
- 23.6 mn estimated people worldwide will succumb to heart problems by 2030.
- 900 people in India fewer than 30 years, die of heart problems every day.
- 25 per cent premature heart attacks in India are seen in younger patients, less than 40 year.

People at higher risk
- Those who have diabetes are five times at a higher risk of having a heart attack.
- Women after menopause are two or three times at a higher risk of having a heart attack.

Types of strokes
Two main types of Cerebro Vascular Accident, or stroke: an is chemic stroke is caused by a blockage; a hemorrhagic stroke is caused by the rupture of a blood vessel. Both type of stroke divest part of the brain of blood and oxygen, because brain cells to die. Ischemic strokes are the mainly frequent and occur when a blood clot blocks a blood vessel and prevents blood and oxygen from getting to a part of the brain. There are two ways that this can occur. One way is an embolic stroke, which occurs when a clot forms someplace else in your body and gets stuck in a blood vessel in the brain. The other way is a thrombotic stroke, which is when the clot form in a blood vessel within the brain.

Magnesium Deficiency
One of the main problems about magnesium deficit is that it is difficult to establish if you are indeed lacking in it. Take your common blood analysis or screening and you will find that they test for sodium, potassium and calcium, while leaving out magnesium. The reason? Only one per cent of the total body magnesium is in the blood, and hence the screening of blood is not an accurate measure of magnesium in the whole body.

Deficiency Magnesium - Health issues
Deficiency of magnesium can lead to a range of health issues such as hypertension, high blood sugar, constant headaches, gut problems, cramps, hair loss, vertigo, carbohydrate cravings, and thyroid problems.
Magnesium is central to a strong heart rhythm since it transports calcium and potassium into cells and its deficiency can cause arrhythmias. Magnesium helps prevent and manage hypertension and cardiovascular disease.

Diet
High magnesium foods include dark leafy greens, nuts, seeds, fish, beans, whole grains, avocados, yogurt, bananas, dried fruit, dark chocolate, and more. The current Daily Value (DV) for magnesium is 400mg.

Uric acid
prognostic for the development of cardiovascular illness, whereas others have fail to recognize uric acid as a important and self-governing risk factor after scheming for other atherosclerotic risk factor in addition uric acid, a powerful endogenous antioxidant, is increased in oxidative strain situation such as stroke. Still, it remains contentious whether eminent serum uric acid is neuroprotective or injurious at the onset of acute stroke.

Uric acid-Gout
Uric acid is a usual waste produce found in our blood. But high uric acid levels can cause aching crystals to form in the joint and kidneys. The crystals in kidneys can also form stones. When high uric acid causes crystals and stones, you have gout.
High blood pressure, diabetes, obesity, and high lipid levels. These conditions can raise uric acid levels and directly harm the kidneys.

Gout causes joint and kidney damage.
- Joints become: Painful, Stiff and swollen
- Deformed Kidneys become: Infected when stones block the flow of urine and it backs up (you may not notice a decreased amount of urine if there is a partial blockage)
- Scarred by sharp stones Kidney infections and scars can also lead to: Kidney disease, Kidney failure
- If you have kidney disease
- It is harder for your kidneys to get rid of uric acid. You are at greater risk for having high uric acid levels and for getting gout. High uric acid and gout may make your kidney function worse. Treating gout attacks may be more complicated because you must avoid medications that harm the kidneys. Talk with your doctor about your Glomerular Filtration Rate (GFR), a simple blood test that measures your kidney role.

Reduce the risk for gout flares
Avoid gout triggers. Triggers are lifestyle habits or changes in your body that cause gout flares. Triggers include stress, illness, injuries, weight gain, drugs, and certain foods and beverages (alcohol, meat, fish, and products high in sugar).
If you have kidney disease, check with your doctor about how much water to drink. Enough water can reduce the risk of forming uric acid crystals.

Follow a healthy lifestyle
Don't smoke, do Exercise; Follow a healthy diet prescribed by your doctor and registered dietitian. Use the tracker and bring it to all of your, doctor visits. The valuable information you record on the chart is specific to only you, and will help your doctor plan the best treatment.

Evade heart attacks – General methods.
Monitor blood pressure regularly.
For those in their 40s, random checking every three months

gives an idea of blood pressure levels.
Monitor cholesterol levels and check if good cholesterol is high as it helps to fight the bad cholesterol in the body.
Cut down on butter, eggs and red meat.
Eat more fish, white lean meat and foods rich in fiber.
Eat fruits and vegetables daily.
Ensure 30 min of moderate exercise every day.
Brisk walking, Cycling, Swimming.

Role of Tea

Worldwide, tea is the commonest beverage after water. A study from India has shown beneficial effect that tea consumption of 450 ml or more than or equal to three cups per day was associated with reduction of the incidence of recurrent ischemic stroke, significant decrement of systolic blood pressure, better control of fasting hyperglycemia, and lowering down of the level of total cholesterol and LDL level in subjects with hypercholesterolemia.
Drink at least 8 cups of water a day

Conclusion

Deficiency of magnesium can lead to a range of health issues such as hypertension, high blood sugar, constant headaches, gut problems, cramps, hair loss, vertigo, carbohydrate cravings, and thyroid problems.
Uric acid is a normal waste product found in our blood. But high uric acid levels can cause painful crystals to form in the joints and kidneys.
Thus the present study suggests that estimation of serum magnesium and Uric acid may be used as markers for predicting CVA. Therefore evaluating serum magnesium and uric acid levels may be useful in the diagnosis and treatment of CVA patients.
Awareness of the warning symptoms of stroke among general public is far from satisfactory. Surveys in the last decade revealed that about one-fourth of the urban and one-third of rural respondents who were unaffected had no knowledge of any warning symptom of stroke. Higher education raises awareness of the warning symptoms of stroke for both rural and urban subjects. Use the tracker and bring it to all of your, doctor visits. The valuable information you record on the chart is specific to only you, and will help your doctor plan the best treatment. Follow a healthy lifestyle: Don't smoke, do Exercise; Follow a healthy diet prescribed by your doctor and registered dietitian for reducing the risk.

References

1. Ghosh P, Misra AK, Bhattacharya AK, Trivedi N, Ghosh A, Ghosh I, *et al*. The Effect of tea in cerebrovascular disease. Ethno Med. 2012; 6:161-6.
2. D C News Paper dated 28 of August, 2017.
3. Kim SY, Guevara JV, Kim KM, *et al*. Hyperuricemia and Risk of stroke: ASystematic Review and Hariklia VD, Apostolos H, Haralambosk. The Role of Uric Acidin Stroke. The lssue Remains Unresolved. The Neurologist. 2008; 14:238-242.
4. National Institute for Health and Clinical Excellence. Clinical guideline 68: Stroke. London, 2008.
5. Osterweil, Neil. Methamphetamine induced ischemic strokes. Medpagetoday. Retrieved 24 August, 2013.
6. Heo SH, Lee SH. High levels of serum Uric acid are associated with silent braininfarctivn. Journal of the Neural Science. [Pub Med]. 2010; 297:6-15.
7. www.net