



A Conceptual Study on Atherosclerosis

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About the Study

Each and every organ and tissue in the human body needs a supply of fresh, toxin free and oxygen-rich blood. That blood is circulated throughout the body via blood vessels, which are termed as arteries. In generally a healthy artery has a smooth lining and is free of blockages that interfere with the blood flow. The narrowing of the arteries which can put blood flow at risk due to the cholesterol deposition (plaque) on the inner wall is generally termed as atherosclerosis. The plaque, which is an earlier sign of atherosclerosis, can even start in the younger age due to unhealthy lifestyle. Cholesterol deposition on the inner wall of the arteries leads to cardiovascular diseases such as heart attacks, strokes and peripheral vascular diseases which we sometimes might hear it as arteriosclerosis or atherosclerotic cardiovascular disease. Atherosclerosis can occur in any artery throughout the body, from those nurturing the heart to brain, intestines, kidneys, and legs. Atherosclerosis initiates as a minute damage to the inner lining of the artery which is more dangerous in persons already diagnosed with high blood pressure, diabetes and high cholesterol conditions that can cause blood to clot more easily followed by other infections of the inner lining of the arteries. But the ultimate result is that platelets are gathered at one site which is then glued by cholesterol, fatty acid and calcium depositions followed by cell debris. Cells present in the arterial wall gradually surrounds the platelet mixture where the wall becomes inflamed during which, even the white blood cells action in the injured area becomes unsuccessful to recover the damage. During this time, the formation of fibrous cap is seen over the fatty materials

deposition, underneath the cap there is a possible growth of the deposits which subsequently block the blood flow resulting in chest pain otherwise called as angina. If there is a rupture of the fibrous cap, it results in the formation of blood clots which leads to strokes and heart attacks. Atherosclerotic symptoms in arteries can lead to chest pain (angina) with physical activity or stress as discussed above. The blockage in the arteries which supply blood to the brain can ultimately result in the stroke and the blockage in arteries that which supply blood to the legs ultimately results in a painful condition called as intermittent claudication. If the person is affected with atherosclerosis, we can only prevent it from getting worse which can be achieved by following a healthy lifestyle. Eating a healthy diet, maintaining physical fitness or exercising regularly, controlling high blood pressure, cholesterol levels, and blood sugar levels and having a frequent health checkups can help in preventing the atherosclerosis to further extent. By taking the low dosage aspirin as directed by physician in recommended doses can prevent the blood from clotting. Another advantage of aspirin is that it reduces the chances of having heart attack in those who are already suffering cardiovascular diseases or significant risk factors pertaining to it. Cholesterol-lowering statin can prevent the atherosclerosis and can also remove certain amount of cholesterol from plaque. Apart from these statins can also prevent the events which lead to heart attacks and strokes. When all these preventive and treatment measures are of no use, the final resort is either angioplasty, in which a blocked artery will be opened or coronary artery bypass surgery.