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What are Vasodilators and what are they used for?

Transcript:

Vasodilatation is the basic principle involved in control of high blood pressure.

Narrowing of your blood vessels is a normal phenomenon as we get older due to thickening of the vessel walls, narrowing the lumen, and to the action of angiotensin 11 derived from inactive angiotensin 1 due to catalyzing effect by *angiotensin converting enzyme*, and making the heart pump with more force for the distribution of oxygenated blood with micro-nutrients- resulting in high blood pressure.

All antihypertensive medication aims at causing vasodilatation of blood vessels and slowing of the heart rate.

Vaso refers relative to blood vessels and dilatation of such vessels is possible due to the smooth muscle content in the vessel wall. Widening of blood vessels do occur that aren't due to underlying diseases. Examples include warm temperatures such as time spent in a hot spar, exercise, medication side effects, eating chili pepper or alcohol and so on.

Applying menthol and eucalyptus containing ointments like 'siddhalapaya' so popular in Sri Lanka, and Tiger balm, have the same effect of dilating the blood vessels.

Certain medications also open or dilate blood vessels. This is caused from preventing the muscles from tightening and the walls from narrowing. This results in blood flow more easily through these vessels, easing the strain on the heart to pump as hard, reduces blood pressure.

Examples of lung vasodilators include oxygen, nitric oxide, and nitroprusside.

A vasodilator is a drug that causes vasodilation, a widening (opening) of blood vessels that results from relaxation of the smooth muscle of the vessels. What widens in vasodilation is

the diameter of the interior (lumen) of the vessel. The opposite of vasodilation is vasoconstriction.

Angiotensin discussed when ACE inhibitors and ARBs in previous videos, has a constricting effect on blood vessels. ACE inhibitors through the action on angiotensin converting enzymes, dilate blood vessels and reduce blood pressure.

Similarly, ARBs i.e., angiotensin receptor blockers are also another type of medicine that enlarges blood vessels. They work by blocking angiotensin from attaching to the smooth muscles of blood vessels

Nitrates are converted to nitric oxide, which activates another chemical that causes the veins and arteries to open.

Doctors give nitrates to treat angina or cardiac pain.

Sildenafil (Viagra), tadalafil (Cialis) increase the blood lowering effects of nitrates and may cause excessive blood pressure drop.

Patients taking a medicine that is a nitrate should not take sildenafil (Viagra), tadalafil (Cialis),

The calcium channel blocker (CCBs) was discussed in a previous video talk, used for lowering blood pressure by slowing the heart rate. Calcium causes the heart and arteries to contract more strongly, thereby increasing blood pressure. By blocking calcium, calcium channel blockers allow blood vessels to relax or dilate and open, thereby lowering the blood pressure.

There are other drugs like Prazosin an adrenergic receptor blocker or called alpha blockers on the muscle cells that surround blood vessels can cause dilation of the blood vessels, and consequently decreases the resistance of blood flow.

CGRP or Calcitonin Gene-related peptide: a novel neuropeptide from the calcitonin gene is the most potent vasodilator known.

Calcitonin gene has been shown to give rise to a peptide. Calcitonin gene related containing neurons in several vessels and vascular beds, including the skin and coronary circulation in humans have been reported as potent vasodilators. CGRP is primarily released from sensory nerves and thus is implicated in pain pathways.

Veggies that cause vasodilation of blood vessels

Leafy greens like spinach and collard greens are high in nitrates, which your body converts into nitric oxide, a potent vasodilator.

Eating nitrate-rich foods may help improve circulation by dilating blood vessels, allowing your blood to flow more easily.

Other foods that cause vasodilatation include

Cayenne Pepper cause vasodilatation and increase of blood flow by stimulating the release of nitric oxide and other vasodilators.

Pomegranate

Onions

Cinnamon

Garlic- has sulfur compounds which includes allicin is a vasodilator.

Fatty fish

Beets

Turmeric

Citrus fruits

Walnuts

Tomatoes

Berries

Ginger

This video talk emphasizes the importance of vasodilatation of blood vessels to increase and stimulate blood flow, and reduce the blood pressure and strain on the heart.

Leading a healthy lifestyle, staying active by daily exercising, maintaining a healthy weight and eating a well-rounded diet can boost your blood flow and overall health.

Hope this video talk was useful.

My mission and vision is to see that all Sri Lankans and others world-wide, imparting a balanced, proved medical knowledge will benefit for better understanding of health issues.

Stay safe and goodbye for now.