ANTIATHEROGENIC AND WOUND HEALING EFFECTS OF TOMATOES



Julius Ogeng'o PhD, MD

Tomatoes are a valuable component of cardioprotective diet (Wilcox et al., 2003; Riccioni et al., 2008). They possess antioxidant activity, reduce blood pressure, low density lipoprotein (LDL) cholesterol, homocystein and platelet aggression by virtue of their high content of lycopene, beta carotene, folate, vitamins A, B, C, E, flavonoids and valuable minerals like potassium, magnesium, chromium, calcium, phosphorous and iron (Beecher, 1998; Wilcox et al., 2003; Riccioni et al., 2008). Through regulation of blood sugar and blood pressure, tomatoes can effectively prevent heart attack, stroke and other atherosclerosis related problems (Bhowmick et al., 2012). Lycopene has been identified as the major cardiovascular health improving ingredient in tomatoes. Besides potent antioxidant activity which improves endothelial function, it reduces ox - LDL and foam cell formation by decreasing lipid synthesis and down regulating the activity and expression of scavenger receptor A (Napolitano et al., 2007; Gajendragadkar et al., 2014). In this way, it reduces the risk of stroke and myocardial infarction (Karppi et al., 2012; Karppi et al., 2012; Ohja et al., 2013; Xinli and Jiuhong, 2014). Indeed, consumption of tomato based foods and preferably whole tomato constitutes a potential first line approach to cardiovascular health (Burton - Freeman and Sesso, 2014). The report by Zamide et al [2015] in this issue revealed that extract of tomato leaf promotes wound healing via antibacterial activity, rapid initiation and acceleration of wound contraction, increased fibroblast production and collagen synthesis. These findings are consistent with other reports...." Tomatoes are rich in Vitamin A and C as well as lycopene which promote wound healing" [www.advancedtissue.com]. These findings provide a strong case for consistent inclusion of tomatoes and their products in our daily diets as part of the strategy for controlling the imminent of epidemic of atherosclerotic disease in Sub - Saharan Africa. Further, tomato leaves have potential for low cost wound management remedies.

REFERENCES

- 1. Beecher CR. 1998. Nutrient content of tomato products. Proc Soc Exp Biol Med; 218: 98 100.
- 2. Bhownik D, Kumar KPS, Paswan S, Srivastava S. 2012. Tomato A natural medicine and its health benefits. J Pharm Phytochem; 1: 33 43.
- 3. Burton Freeman BM, Sesso HD. 2014. Whole food versus supplement: comparing clinical evidence of tomato intake and lycopene supplementation on cardiovascular risk factors. Adv Nutr; 5: 457 485.
- 4. Gajendragadkar PR, Hubsch A, Maki _ Petaja KM, Serg M, Wilkinson IB, Cheriyan J. 2014. Effects of oral lycopene supplementation on vascular function in patients with cardiovascular disease and healthy volunteers: A randomized controlled trial. PLOS ONE, 9 (6): e 99070.doi:10.1371/journal.pone.0099070.
- 5. Karppi J, Laukkanen JA, Makikallio TH, Kurl S. 2012. Low serum lycopene and β carotene increase risk of acute myocardial infarction in men. Eur J Public Health, 22: 835 840.
- 6. Karppi J, Laukkanen JA, Sivenius J, Ronkainene K, Kurl S. 2012. Serum lycopene decreases the risk of stroke in men. A population based follow up study. Neurology; 79: 1540 1547.
- 7. Napolitano M, Pascale CD, Wheeler Jones C, Botham KM, Bravo E. 2007. Effects of lycopene on the induction of foam cell formation by modified LDL. Am J Physiol; 293: E1820 E1827.
- 8. Ohja S, Goyal S, Sharma C, Arora S, Kumari S, Arya DS. 2013. Cardioprotective effect of lycopene against isoproterenol induced myocardial infarction. Hum Exp Toxicol; 32: 492 503.
- 9. Riccioni G, Mancini B, Ilio ED, Bucciarelli T, D' Orazio N. 2008. Protective effect of lycopene in cardiovascular disease. Eur Rev Med Pharmacol Sci; 12: 183 190.
- 10. Wilcox JK, Catigari GL, Lazarus S. 2003. Tomatoes and cardiovascular health. Rev Food Sci Nutr, 43: 1 18.
- 11. Xinli LI, Jiuhong XU. 2014. Dietary and circulating lycopene and stroke risk: a meta analysis of prospective studies. Sci Rep 4: 5031.
- 12. Zamide El, Ajani RS, Oladapo OO. 2015. Does Lycoperscon Esculentum (Tomato) accelerate or retard wound healing in Wistar rats? Anat J afr, 2015; 4: 522 527.