



Proposed Hypothesis of Action of *Sumbulus-Moschatus* In Atherosclerotic Plaque Remodelling At Cellular Level

Sumbulus-moschatus or *Ferula-sumbul* (Musk-root) is a well known but until recently, a partially proved remedy, used since antiquity in cardiological disorders, especially for remodeling atherosclerosed arteries. The root has long been used in India medicinally and as incense in religious ceremonies.

The results of the proving of *Sumbul* can be found in Allen's Encyclopedia of Pure Materia Medica and Hering's Guiding Symptoms. Apart from these works, there is little in our literature about this drug. Like every homoeopathic remedy, *Sumbul* is useful when indicated. It shall fail to act if it does not cover the totality of the symptoms. It is not called for in every heart lesion. But when it is the indicated remedy nothing can excel it in efficiency. It is very close to *Medorrhinum*, *Moschus* and *Asafoetida* in its provings. In the proving of this drug at our clinic, we too (as the previous provers) observed the following symptoms as regards the cardiovascular system. Cardiophobia; Nervous palpitation in hysterical subjects; early features of Rheumatic carditis as tightness or oppression in chest, which was one of the chief symptoms. Sensation of heaviness under the sternum. A stretched feeling across the left anterior precordium < inspiration, < stooping, < thinking about it. Sick feeling near left breast and all over. Hot flushes from back, left arm numb, heavy with shooting pain in fingers (Ulnar side). ON EXAMINATION - Pulse: Soft, irregular, missed beats, compressible; want of elasticity in vessels. Apex impulse strong, forceful after exertion or post-meal. Apex beat- at times irregular, rapid, then slow. Soft systolic murmur at apex (Grade I/VI).

INVESTIGATIONS - Ventricular Premature Contractions on ECG especially in Leads V1-V4.

Until recently, atherosclerosis was thought of as a degenerative, slowly progressive disease, predominantly affecting the elderly and causing symptoms through its mechanical effects on blood flow, particularly in the small caliber arteries supplying the myocardium and brain. Thus, the approach to treatment has traditionally been surgical. However, recent research into the cellular and molecular events underlying the development and progression of atherosclerosis, prompted by careful descriptive studies of the underlying pathology, has shown that atherosclerosis is a dynamic, inflammatory process that is eminently modifiable by medicines.

Time and again, homoeopaths are questioned about the mode of action of our remedies on the cellular plane. The department of Homoeopathic Cardiology of The National Academy of Homoeopathy, India, after proving the above-mentioned drug, has proposed the hypothesis of action of *Sumbul* in atherosclerotic plaque remodeling at the cellular level. The modulation of various biological mechanisms involved in atherosclerosis and the action of *Sumbul* thereof, has been summarized as follows:

1. **ENDOTHELIAL FUNCTION**- Endothelium is the cuboidal cell lining, forming the inner coat of blood vessels. Within the coat itself, there exist specialized cells. They release vital hormones in the blood stream which not only modulate the vascular tone, but are also involved in inflammatory reaction and the entire process of atherosclerosis. It is well established that Endothelial dysfunction is the first step of the chain of atherosclerosis and vascular disease. Central to the dysfunction is the deregulation of endothelial derived Nitric Oxide. This chemical plays a major role in vessel dilatation, reaction of the sub-endothelium with blood monocytes and proliferation of smooth muscle cells in the subendothelial layer. *Sumbul* increases the bioavailability of nitric



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oxide, thereby preventing the pile up of cholesterol and other debris at the site of endothelial tears. The reversal of this endothelial dysfunction in persons of Tubercular miasmatic state, who are prone to tendency of atherogenesis, can be one vital biological mechanism for the action of the drug at the molecular level.

2. INFLAMMATION- The role of inflammation and immunity in the pathogenesis of atherosclerosis has increasingly been recognized. The secretion of inflammatory cytokines by macrophages and T-lymphocytes modify the endothelial function, cause smooth muscle proliferation, collagen degradation and promote thrombosis. Inflammatory processes are early signs of atherosclerosis and stability of the atherosclerotic plaque. A number of clinical studies have shown a clear correlation between reduction in inflammation as measured by inflammatory markers as CRP and a positive clinical outcome. *Sumbul* is believed to inhibit this process of local inflammation.

3. PLAQUE STABILITY- The atheroma is a disease ultimate or the end result of a disease process ie atherogenesis. It begins as a subendothelial accumulation of lipid laden; monocyte derived from cells and associated T cells which form a non-stenotic fatty streak. With progression, the lesions take the form of an acellular core of cholesterol esters bounded by an endothelialised fibrous cap containing vascular smooth muscle cells and inflammatory cells, predominantly macrophages which tend to accumulate at the shoulder regions of the plaque. Also present in advanced lesions are new blood vessels and deposits of calcium hydroxyapatite. Thus atherosclerotic plaques are complex and it is the dynamic interaction between the different components of the plaque that dictate the outcome of the disease. Rupture of an atherosclerotic plaque leads to an acute coronary

syndrome. *Sumbul* helps in stabilizing this plaque. It probably acts by modifying the lipid contents of the plaque, thereby preventing plaque rupture and further episodes of ischemia.

4. SMOOTH MUSCLE CELL PROLIFERATION- This is important in the development of plaques in post-angioplasty restenosis and venous graft occlusion. Our studies at the Academy suggest that by controlling smooth muscle proliferation, *Sumbul* may modulate the cellularity of the arterial wall in the proliferative psoroscytic atherosclerotic lesions.

5. VASCULOGENESIS- *Sumbul* promotes neovascularization or vasculogenesis and thus contributes in reducing the recurrence of coronary vascular events.

CONCLUSION: From recent evidences we can effectively conclude that *Sumbul* has a pleiotrophic effect that may largely account for the clinical benefits observed. It has been shown to stabilize unstable plaques, improve vascular relaxation and promote neovascularization at the cellular level. The clinical relevance of these effects is now a reality.

REFERENCES

Allen TF: A Primer of Materia Medica for Practitioners of Homoeopathy.
Boericke W: Pocket Manual of Homoeopathic Materia Medica, 9th Edition.
Chimthanawala K: Is Doctrine of Miasm a myth?
Clark J H: A Dictionary of Practical Materia Medica
Deedwania P C: Endothelium: a new target for cardiovascular therapeutics: J Am Coll Cardiol, 2000; 35:67-70.
Gibbons GH, Dzau VJ: The emerging concept of vascular remodelling. N Eng J Med, 1994; 330 (20): 1431-1438
Hering's Guiding Symptoms
Kanjilal JN: Writings on Homoeopathy; Vol 2. 238-254.
Sarkar B K: Commentry on Organon



The most satisfying work.....Helping others
The ugliest personality trait.....Selfishness
The most endangered species.....Dedicated leaders