



## Cardiotonic Drugs from the Avicenna's Point of View

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### Dear Editor-in-Chief

Despite the widespread use of chemical agents in the field of cardiovascular diseases, today, universal approach is towards natural remedies. Old medical schools are important sources of natural medicines and one of the most impressive ancient scientists is Avicenna (980-1037 AD). Avicenna not only devoted a chapter of Canon to heart diseases and their treatment but also wrote a treatise on cardiac drugs. The name of this essay is "Al-Resaleh fi Al-Adviyah Al-ghalbyah" which includes multiple simple cardiotonics such as Rose (*Rosa damascena* L.) and amla (*Embllica officinalis* Gaertn.) (1).

Rose is a cardiotonic drug due to its fragrance and astringency power (1). Two cardiotonic products of rose are rose water and sugary "goleghand" (an electuary that is made of rose petals and sugar) (2). On the other hand, recent studies demonstrated that rose has inotropic effect (3), and recovers cardiovascular function (4). Amla is a cardiotonic drug because of being astringent and strengthening the cardiac mass. It has been shown that amla can improve contractile function and tissue antioxidant status (5) and protect rat hearts from oxidative stress (6).

Avicenna's definition of cardiotonic is comparable in part to its modern definition, however, encom-

passes more details. According to Canon, astringency power ("ghabz"), being fragrant, and desiccation ("tajfif") or drying redundant moistures are the most important traditional mechanisms of action of cardiotonics (2).

Additionally, some drugs such as cinnamon, pistachio, and camphor have an inherent individual property, which is named as "theriaqiyat" (being antidote). The action of antidote drugs is related to reinforcement of the nature ("tabiat") (2). "Theriaqiyat" may be considered as an analogous to antioxidative property; because, the drugs with these two properties can eliminate the harmful effects of toxins. Moreover, astringency power may be matching to myocardial contractility in some simple drugs. However, research that is more extensive is needed to confirm these theories.

We can rationalize the effectiveness of traditional cardiotonics in treatment of heart diseases by means of previously mentioned mechanisms. For example, a drug, which is astringent or desiccant, can be considered as a good remedy for cardiac diseases such as edema, dilated cardiomyopathy, and pericarditis, which originate from tissue laxity due to excess moisture. Moreover, cardiac diseases due to weak action of myocardium or valves can

be treated by use of astringent, mass toner, and aromatic natural drugs. Finally, some plants which are usually a part of our diet are cardiotoxic and easily accessible. We can consume apple, amla jam, quince syrup, and rose water without any considerable side effect. Moreover, smelling fine and compatible aromas such as rose essence and prevention from unpleasant odors are effective in strengthening heart.

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