Letter to the Editor

Avicenna's view of reperfusion in myocardial infarction

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Acute myocardial infarction (AMI) with consequent left ventricular dysfunction and heart failure continues to be a major cause of morbidity and mortality in the Western world [1]. Reperfusion therapy for myocardial infarction (MI) aims to restore myocardial perfusion in order to limit infarct size and ultimately improve patient outcomes [1,2]. The recommended strategy to limit infarct size is early reperfusion with percutaneous coronary stenting or thrombolytic therapy [3,4].

Pharmacological treatment of AMI has progressed significantly over the past decade. Most developed countries have established comprehensive national records that document the use of the various medications as well as interventional procedures in patients with AMI [5]. In related studies it is recommended to conduct further research to investigate newer cardioprotective strategies in order to improve outcomes following AMI [1].

Assessment of this issue from a historical perspective of different schools of medicine can be useful and illuminating. One of the major schools of medicine, which has a history of several thousand years, is Iranian traditional medicine. The ancient Iranian medicine combined different medical traditions from Greece, Egypt, India and China for more than 4000 years, which merged to form what became the nucleus and foundation of medical practice in Europe in the 13th century [6]. This article presents the reperfusion in myocardial infarction according to Iranian traditional medicine.

Avicenna (Ibn Sina) was the greatest Iranian physician and philosopher [7]. His masterpiece the Qanon of Medicine, ‘Al-Qanon fi al-Tibb’, has served as an essential medical text book and teaching guide for scholars in the Islamic territories and Europe for almost a millennium [8]. Ibn Sina is widely regarded as the father of modern medicine and clinical pharmacology [9].

Avicenna discussed cardiovascular diseases, including myocardial infarction, in the third volume of the Qanon [10] and he expressed the view that one of the causes of AMI is arterial obstruction due to increased viscosity and blood clots [11]. He presented microvascular circulation in different parts of the Qanon of Medicine by these words ‘Tanfiz al-dam fi al-masalek al-zayeqa’ [12]. Tanfiz al-dam means blood flow and al-masalek al-zayeqa means microvascular.

For better understanding of Avicenna’s view of microvascular circulation (‘Tanfiz al-dam fi al-masalek al-zayeqa’), some principles should be explained. Based upon Avicenna’s Qanon, the human body is composed of four humours (Blood or dam, Phlegm or balgham, Yellow bile or safra and Black bile or sauda) and the basis of good health is their correct ratio and the specific balance of humours based on their quality and quantity [13,14].

It is worth mentioning that yellow bile in Iranian traditional medicine differs from what we have in conventional medicine. Yellow bile as one of the four humours is a collection of materials which has specific functions in the body [12]. One of the most important functions of yellow bile, expressed by Avicenna, is the effect of bile on the circulatory system.

According to Avicenna therefore, to improve blood flow in capillaries such as the small branches of coronary arteries, the body needs yellow bile. If the level of the yellow bile in the blood is lowered for any reason, blood flow will decrease and, as a result, the blood viscosity will increase.

Based on Iranian traditional medicine, specific strategies have been suggested to increase the yellow bile in the blood, which may point to new methods of prevention and treatment of myocardial infarction.
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