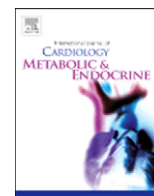




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Erectile dysfunction and cardiovascular disease



Erectile dysfunction (ED) is a common sexual disorder that affects >500 000 men per year. With the increasing incidences of ED, quality of life has been impacted both among ED patients and their partners. ED is associated with emotional distress that can significantly affect important psychosocial factors, such as confidence and self-esteem, and may damage personal relationships [1]. However, the pathophysiological mechanism involved in the causation of ED is multifactorial and not well delineated. Several recent studies have confirmed that ED is the result of multiple interrelated comorbid conditions such as cardiovascular disease, and ED has been recognized as a potential independent risk factor and/or predictor for cardiovascular disease. Recently, several studies have found that ED and cardiovascular disease share a lot of common risk factors such as age, hypercholesterolemia, insulin resistance and diabetes, hypertension, smoking, metabolic syndrome, and obesity [2], and share a common pathophysiological basis of etiology and progression, e.g. impairment of endothelial function, atherosclerosis [3], and subclinical inflammation [4]. It has also been reported that under a given atherosclerotic burden condition, the smaller penile arteries suffer obstruction earlier than the larger coronary arteries. Also, at the same degree of endothelial dysfunction penile arteries will be symptomatic, while subclinical in the larger coronary arteries because penile arteries have a greater endothelial surface and erection itself requires a large degree of vasodilation to occur when compared with coronary arteries [5]. ED may precede cardiovascular disease by a significant period that usually ranges from 2 to 5 years (3 years in average) [6].

The underlying mechanism by which the pathogenesis of ED was regulated includes the nitric oxide (NO)/cyclic guanosine monophosphate (cGMP)/protein kinase G (PKG) pathway, the RhoA/Rho-associated protein kinase (ROCK) signaling pathway, reactive oxygen species (ROS), the renin–angiotensin system (RAS) and tumor necrosis factor- α (TNF- α) [7].

The most common concern of men with ED and their partners is that when can sexual activity be safely resumed after a cardiovascular event. However, a very low percent of cardiac patients receive formal sexual counseling. Many couples have anxiety and fear regarding sexual needs [8]. One follow-up study, which had recruited men aged 55 years or older, has found that after following an initial report of ED, 2% of men had experienced an initial CV event at 1 year, and 11% had experienced a CV event by 5 years [9]. It has also been reported that ED is associated with increased risk of cardiovascular events and all-cause mortality. Thus, ED may be used to predict the risk of future fatal and non-fatal cardiovascular events (e.g. myocardial infarction and revascularization) and total mortality in the general population and in high cardiovascular risk patients [10]. So, it is important for physicians, especially for

cardiologist, to understand that the relationship between ED and cardiovascular disease is not a coincidence but rather a warning signal. Furthermore, the symptoms of ED normally arise before the symptoms of a cardiovascular event [11]. That is to say ED may serve as an early warning for cardiovascular disease.

Although ED may be the only reason for men to see a doctor, this presents a good chance for doctors not only to treat erectile dysfunction, but to perform opportunistic screening for cardiovascular risks as well. It is very important for these patients with sexual dysfunction to have their cardiac risk evaluated and to initiate secondary prophylaxis with regard to any risks aggressively as early as possible.

Conflict of interest

The authors report no relationships that could be construed as a conflict of interest.

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