

## Chapter 17

# Chinese Herbal Medicine in the Management of Atherosclerosis–Related Chronic Conditions in an Aging Population

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### ABSTRACT

*Chronic conditions are important problems for an aging society. They impede on healthy aging and increases the cost of living due to increased medical cost. The most prevalent chronic conditions faced by the elderly population are hypertension, high cholesterol and diabetes mellitus. They increase the risk of developing atherosclerosis, a chronic condition which causes heart attack and stroke. This chapter provides a review on existing therapeutics for the treatment of cardiovascular disease, and briefly discusses their side effects. This chapter also provides a brief introduction to Traditional Chinese Medicine (TCM), and its development in ancient China. This will be followed by a discussion on the recent research on the use of Chinese herbal medicine (CHM) in the treatment of cardiovascular diseases, and the potentials and challenges of incorporating CHM in mainstream healthcare system.*

### INTRODUCTION

Chronic conditions are the major obstacles to healthy aging. They impact on the quality of life and increase the cost of living. The top three most prevalent chronic conditions in the elderly population are hypertension, high cholesterol and diabetes mellitus (Census and Statistics Department Hong Kong SAR, 2014). These chronic conditions are the main contributing factors to atherosclerosis, which can

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manifest as ischemic heart disease and stroke, the two most common causes of death in the world (World Health Organization, 2014). Chinese Herbal Medicine (CHM) has been used for thousands of years in China. In recent years, there is greater recognition of CHM due to advances in pre-clinical and clinical research leading to mounting evidence of its efficacy.

This chapter will first highlight the important public health problems faced by an aging and westernizing Chinese community – ischemic heart disease and stroke; and an outline of conventional therapeutics being used to manage ischemic heart disease and stroke. Then the pitfalls of existing therapeutics will be discussed, followed by a brief introduction to CHM and generic examples of the use of CHM in health maintenance; and a review on pre-clinical and clinical studies on using CHM or integrative Western and Chinese Medicine specifically in managing ischemic heart disease and stroke. The readers will gain an appreciation of how CHM being combined with modern Western medicine or on its own can be used to manage ischemic heart disease and stroke, and ultimately promoting healthy aging. It also hopes to encourage medical professionals and policymakers to consider how to better engage Chinese medicine practitioners when devising treatment regime for their patients where appropriate to bring about the best outcome for patients.

## **BACKGROUND**

There has been an increasing life expectancy in the populations of most developed countries in the last decade. From 2004 to 2014, life expectancy for both male and female increased by 2 years in most countries including Hong Kong (Food and Health Bureau, 2016). Moreover, in Hong Kong approximately 15% of the population are aged 65 years or older at the end of 2015 (Census and Statistics Department Hong Kong SAR, 2016). It is expected to double and reach approximately 30% in the next 20 years (Census and Statistics Department Hong Kong SAR, 2015), and by then the median age will shift to 50. The increase in life expectancy and the aging of population over the past decades have led to a substantial increase in age-related cardiac, arterial and microvascular diseases in developed countries. It is well documented that aging is closely associated with the progressive decline in normal physiological functions and has significant impact on the heart and vascular system. The incidence of ischemic heart disease and stroke increases exponentially with aging.

According to the World Health Organization (WHO) (2014), ischemic heart disease and stroke were the top two leading causes of death in 2012, accounting for 7.4 million and 6.7 million of deaths, respectively. In Hong Kong, diseases of heart and cerebrovascular diseases were both listed among the top four causes of death in Hong Kong for elderly people aged 65 and over (Census and Statistics Department Hong Kong SAR, 2014).

In a recent study in Hong Kong, total direct medical cost for a patient newly diagnosed with stable ischemic heart disease is approximately HK\$ 89,700 (US\$ 11,500) in the first-year, where the cost can be significantly higher if the patients required surgical procedures for their conditions (Lee et al., 2013). These costs are currently not being covered under the Public healthcare in Hong Kong, and the patients are often required to pay out of pocket. The ongoing cost in managing chronic conditions is also likely to increase, due to an extended lifespan of individuals and inflation. In the coming years, the society will be facing an increase in the proportion of elderly people and the decrease in the number of working population. Moreover, the public healthcare sectors face shortage of doctors and the lack of hospital beds in public hospitals. Therefore, there is a pressing need to develop more effective medications to combat

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