

### **Editorial: Coronary care in China- starting from the tip of the iceberg?**

In this issue of Heart Yin and colleagues report an important piece of qualitative research on the barriers to early management of patients suffering an STEMI in the Guangdong region of China. (Yin X;)

China has a high burden of Ischaemic heart disease with MI at the tip of the iceberg of cardiovascular disease which is among the leading causes of death in China. The age standardised mortality rate for ischaemic heart disease (IHD) was 137/ 100,000 in 2016 and this has been rising. (Liu et al.) This burden of heart disease is driven by China's ageing population, rapid economic growth and urbanisation leading to changes in lifestyle factors particularly high salt consumption and high levels of smoking. However, while the burden of (IHD) is high linked to an estimated 1.7 million deaths in 2016, progress is being made on the broader category of cardiovascular disease with age standardized cardiovascular mortality falling nationally. (Liu et al.)

The research by Yin is notable for two reasons; firstly qualitative biomedical research originating in China is still unusual and shows a coming of age of the emerging Chinese research powerhouse in terms of adopting the full range of research methodologies in this setting. Secondly, qualitative research is still relatively unusual in cardiovascular research and unusual in being published in Heart. The study explores the acute presentation of ischaemic heart disease; an important health issue globally and for China in particular, and is important in exploring the strengths and weaknesses of its developing health care system. There is an evident transition of their health care system with very highly developed areas such as Percutaneous coronary intervention (PCI) services which are in contrast to evidently weakly developed areas such as primary care, health IT systems and resources for investigating chest pain. This is illustrated by the reported lack of basic equipment like ECGs in primary care and ambulances, in contrast to resources in its PCI services and suggests a very interesting tension in allocation of resources within China's health care provision. (Yin X;)

The study looks at the perspective of informants such as patients, clinicians and policy makers and so the scope of the study is ambitious. Key findings from the study were the lack of knowledge of myocardial infarction (MI) symptoms by some patients and a lack of capacity in health systems below tertiary care to cope with rapid assessment and coordinated management of patients with suspected STEMI. (Yin X;) There are limitations to the study. Patient recruitment was biased to those who successfully used or navigated the system so the study excludes informants who would struggle or failed to get appropriate care; these informants often have more to tell us about how health care

services work or don't work. Reaching thematic saturation with only 8 patient informants within such a complex system around individual health beliefs and their interactions around the management of their chest pain is surprising. Health beliefs and illness behaviour in China are undoubtedly interesting, for example the scenario of the reported prolonged delays for patients and staff in deciding about potentially time critical life saving treatments, while families are consulted is novel. Some of the recommendations may be overstated specifically around aspects such as a mechanism to fast track patients with chest pain. Without understanding the whole system recommendations such as this may have unintended consequences such as flooding ER depts with non cardiac chest pain at the expense of those with other emergencies like stroke.

Evidence would suggest that management of those suffering an STEMI appears to be well developed in Chinese tertiary hospitals where they are able to offer appropriate interventional services but management of the wider burden of heart disease does not appear well developed elsewhere in the healthcare system. (Du et al.) (Lu et al.) Identifying and intervening during an STEMI is a vital service for salvaging patients from this critical illness, (Wu et al.) but beyond the one off high tech "cure" of a stent, this approach doesn't address why their IHD is only identified during an MI. There is a need for a preventative perspective for those at risk of developing heart disease for example by measuring and reducing cardiovascular risk. There apparently are opportunities for earlier interventions to those developing early symptomatic heart disease. The presentation of probable angina seems to be part of the narrative in several of the study's interviews. (Yin X;) These patients may well have been prevented from having a STEMI by earlier medical or elective surgical interventions. These approaches are much more sustainable and cost effective particularly in relatively low resource settings. (Scudeler et al.) However, this cannot be an "either or" approach as it is unrealistic to expect an emerging well informed society that knows about acute potentially life-saving interventions like PCI to not have them.

As important as accessing cardiac facilities is for acute events, China also needs therefore to develop good primary care systems not only to identify and manage cardiovascular risk factors (Wang et al.) but also to provide good follow up and effective secondary prevention for those who have been treated for an MI. (Lu et al.) Studies from China clearly show that those having PCI without effective follow up have poorer control of their cardiac risk factors, poor adherence to secondary preventative medication and worse cardiovascular outcomes. (Du et al.) For example, in one study only 11% of pts with IHD were taking both statins and an antiplatelet (effective and low cost treatments for established heart disease). (Lu et al.) Yin identifies that there are significant cost barriers to accessing health care for the Chinese population. (Yin X;) This includes "out of pocket costs" that are not covered by insurance such as prescription drug costs and out patient follow up. These financial barriers will

disproportionately affect poorer households and those with chronic diseases like IHD. (Wang et al.) While Yin reports well developed tertiary care systems for management of MI and identifies barriers and blocks to appropriate patients accessing these services, a whole system approach to cardiovascular disease is therefore needed. If patients at risk of CVD are not identified and those that are treated but are unable to afford the follow up that addresses lifestyle factors and provides the treatment for the secondary prevention (statins, antiplatelet, etc) cardiac outcomes may well not improve overall.

China needs to continue developing its weaker primary care and public health systems to help reduce the burden of heart disease. (Liu et al.) This study identifies several areas where patients could be identified before having an STEMI. The authors identify the role of a “village doctor” as part of the system to access care for many and this has no direct equivalent in many health care systems. If village doctors are outside of established systems of primary care and are not offering appropriate care; if primary care physicians can't quickly refer to chest pain services and if patients don't have access to low cost effective drugs then health outcomes opportunities are lost. This is where this type of research from the qualitative paradigm (Yin X;) can complement and unpick what is known from quantitative approaches (Li et al.) and is so important in developing an understanding of the problems and to help identify ways of improving, in this instance cardiovascular health care.

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