ACUTE CORONARY CHAUDRY Bureera

Elective 2011- Malaysia, Kuala Lumpur General Hospital

1. *First impression of KL General Hospital and how this differs to hospitals in the UK*

On initial introduction to the hospital I was surprised at the similarities in the teaching styles of the Malaysian medical education system and that of Barts and The London medical school. The emphasis that was placed on "self directed" learning and the open dialogue enabled us to discuss what our aims and objectives were and what we wanted to acheive from our elective experience. The deputy dirctor of KL General Hospital, Dr. Ding Lay Ming and her staff greeted us on our arrival and the informal discussion that followed encouraged us to utilise our time constructively and customise our learning. This provided scope for both fullfillment of our clinical objectives and an opportunity to be able to experience an international healthcare system and appreciate both its strengths and limitations.

The layout of the hospital in terms of its size and departments was quite similar to that of any UK hospital. Major emphasis was placed on standard of cleanliness and basic hygiene. Familiar posters and requests for both clinical staff and patients to exercise hand hygiene were visible throughout the hospital. However, due to funding issues, perhaps, there were not as many hand sanitizers dotted around the hospital compared to those in the UK. Surprisingly, it was obligatory for all doctors and medical students to wear white coats whereas this practice has been abandoned in the UK as an infection control measure. Futhermore policies such as "bare below the elbows" have been implemented for all clinical staff to further reduce cross infection. Hygiene standards within the hospital were monitered by a private company called Radicare and regular quality assurance checks and inspections were carried out by hygiene inspectors.

The hospital staff were very friendly and both the clinical and administrative staff helped us to decipher the signs which were all written in Malay and pointed us in the right directions as it was easy to get lost when trying to locate a particular department. There were many information helpdesks within the hospital as would be seen in a typical hospital in the UK. In addition to this there was a much more obvious police presence within the hospital despite there being not particularly violent or agressive patients.

In summary the style of learning combined with a hospital facility that functioned very much like a UK hospital enabled me to concentrate more on the medical aspects and allowed me to focus my attention on how policies and practices differed in an attempt to manage common conditions in an international setting.

2. *How common is ACS in Malaysia and does this differ to the UK?*

The most common causes of admission in Malaysia (taken from 2009) are:

1. Disease of the respiratory system
2. Malignant neoplasms
3. Complications of pregnancy, childbirth and puerperium

4. Accidents
5. Normal deliveries

The most common causes of admission in the UK:
1. Ischaemic Heart Disease
2. Stroke
3. Cancer
4. Falls
5. Accidents

After speaking to our supervisor, it became apparent that ACS admissions are in fact quite common- with at least 1-2 presenting per day. There is a rise in ACS cases and our supervisor puts this down to obesity, uncontrolled diabetes and hypertension. The acute coronary syndrome (ACS) registry is a flagship of the National Cardiovascular Disease Database (NCVD), helped by dedicated and untiring efforts of doctors and nurses in both public and private medical institutions. This is also guided and supported by the National Heart Association, the National Heart Foundation, the Clinical Research Centre and the Ministry of Health of Malaysia. They have provided data (2006) from 3422 patients with ACS admitted to the 12 tertiary cardiac centres and general hospitals spanning nine states in Malaysia. Their report reveals mean age of patients with ACS was 59 years while the most consistent risk factor for STEMI was active smoking. Thrombolysis (for STEMI only) reduced in-hospital and 30-day mortality by nearly 50%. Percutaneous coronary intervention or PCI also reduced 30-day mortality for patients with non-ST elevation MI and unstable angina. The strongest determinants of mortality appears to be Killip Class and age of the patient.

Although the Government has initiated several health promotion campaigns, it appears that the main culprit in the rise in ACS is a combination of non- compliance with medication, a lack of patients' understanding of their disease, other risk factors like DM and hypertension, and smoking. In the UK, the Government and charities like the British Heart Foundation, have organised education classes for patients who have had an MI to help them understand their disease, methods of secondary prevention and the reasons for this. This has helped compliance with pharmacological and non- pharmacological treatment. It may be possible that this strategy may be beneficial in tackling the ACS rise in Malaysia

3. ***What is the care pathway for a patient presenting with ACS and how does this differ to that in the UK***

a. Patient arrives via ambulance or own transport
b. Triaged by nurse or assistant medical officers
c. Depending on patient's haemodynamic status:
    i. Stable patients: take a history, GTN and aspirin (300mg), diagnostic tests (ECG, exercise tolerance test)
    ii. Unstable: patients taken to medical resus area and specialist On call doctor contacted

d. If diagnosis is STEMI, streptokinase given provided not contra-indicated. This is followed by Cardiac rehabilitation and risk stratification
e. If diagnosis is NSTEMI or non- stable angina, or atypical chest pain- patients are admitted for observation and serial ECG, and possibly heparin therapy.

The main differences we found with the ACS protocol in Malaysia and in the UK:

- First set of ECGs are done on admission in Malaysia and not in the ambulance
- Streptokinase is still actively used in Malaysia
- There is no tertiary PCI centre in Malaysia. There is a Cardiac specialist hospital close to the KL General hospital that do PCI but patients are rarely transferred because they are unstable, they breech the 90minutes time frame from 'door to balloon', or there is no space available for out lying patients.
- Cardiac enzymes are only arranged by specialist/ senior doctors due to lack of funding. However, in the UK it is possible for all doctors and specialist nurses to request these tests.
- 60 minutes time frame for 'door to needle' (with streptokinase)- if this is breeched in KL hospital, doctors are required to explain why this happened.
- If doctors are unsure about the diagnosis of chest pain, they can refer patients to Cardiac specialists who then do a range of blood tests for cardiac enzymes.

4. ***What are the primary and secondary preventions used for ACS in Malaysia.***

Primary prevention for ACS in Malaysia includes educating individuals on living a healthy lifestyle, increasing exercise and eating a healthy diet. This is done by public health clinics and specialist doctors. Public health clinics are responsible for educating patients, continued regular follow ups and providing prescriptions (all prescriptions cost 1 ringget, which is affordable for the general population). General Practitioners also play a part in promoting healthy lifestyle but are privatised, therefor, are not suitable for lower income households.

One of the major risk factors of ACS in Malaysia is DM, hence, there is extra emphasis in diabetes control. Patients can be non-compliant with their medication and may benefit from extra support and education regarding their illness.

Secondary prevention is similar to that of the UK and includes the use of Asprin, Clopidogrel, β-blockers, ACE inhibitors, nitrates and statins. However, it appears that polytherapy is a major cause of non-compliance in Malaysia.