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COMMUNITY MEDICINE

The elective report

1. What is the prevalence of chronic illnesses in England, and how does it compare to Derby and other major cities in the world?

I undertook my elective at a General Practice in Derby. Since there are many chronic disease, the area which I will concentrate is on Cardiovascular disease, given its significance on morbidity and mortality in the western world.

For example, the leading cause of death in the UK is largely due to cardiovascular disease. The data suggests that up to 150,000 deaths in England were secondary to coronary events. However the data isolated is not particularly useful; it can be further stratified to more efficacious and insightful strands; for example, Coronary heart disease, that is heart disease secondary to atherosclerotic pathology, is responsible for a large proportion of these deaths, roughy 45% to 50%.

To appreciate the implications of this further, one can look at the pathogenesis of artherosclerosis. Things that are implicatd in the pathology, excluding the rare causes of inherited hyperlipidaemia include, diet, that is cholesterol and saturated fats. Other things include, smoking, excessive alcohol and of course hypertension. While the two go hand in hand, hypertension itself poses its own risk factor, and things that contribute to it include sedentary lifestyles, salt intake, and personality traits are also thought to contributory. The reason for these stratifications is simple- if taken as isolated risk factors, such as alcohol consumption, the smoking rates, we can attempt to draw correlations and then determine whether places like Derby, a small industrial town with its predominantly working class society lends itself to an increase risk of developing coronary heart disease. Notwithstanding, it must be noted, that it is not satisfactory to make assumptions that owing to its working class roots, Derby has higher levels of hypertension, or alcohol consumption, as it would be bigoted and short sighted. Off topic, an ethnographic and sociological study looking into this would be helpful for this purported assumption.

In addition, cerebral vascular accidents, more commonly referred to as stroke is accountable for a further 27% of those deaths. The reason for its inclusion in the cardiovascular disease category is because it essentially shares exactly the same pathogenesis as coronary heart disease. As with any good study, the data must be acted upon. Therefore, Derby established the East midlands Cardiac & Stroke Network. This served as a means to public health studies and health promotion. This network is setup to help observe epidemiological data to help in planning and providing healthcare in the region.

The following is a summary of the data that was compiled in 2010 with regards to CHD and CVAs. It was an exhaustive study and compared the local rates with the national levels.

For Derby,

- For the cardiovascular early mortality for those under 75 is higher than the national average . it was 76.9% compared to 64.7%.
- However this rate has been in steady decline since 1995.
- The CHD emergency admissions are also higher than the national average 235.5 compared to 225.9.
- The angiography intervention level is significantly lower for Derby city but has a higher than national average revascularisation rate.
- For individuals who are diagnosed with a STEMI, that is the myocardial infarction with ST elevation and, or chest pain and elevated cardiac enzymes, the 30 day mortality is slightly lower than the national average.
- The observed rate of Coronary Heart Disease in Derby and England is the same at 3.4%.
- Interestingly, the observed rate of hypertension in Derby (13.9%) is marginally higher than the average in England (13.5%).
- The rate of stroke, including both hemorrhagic and cerebral ischemic events in Derby (1.6%) is slightly lower than the average for England (1.7%)

Another important chronic disease afflicting the heart is heart failure. This is when the body's metabolising tissue cannot be met by the heart due to inadequate function. The causes of heart failure are many fold, but are broadly split into 5 categories including valve disease, preload and afterload problems. In any case, the data conducted by the East midlands Cardiac & Stroke Network found that the percentage of those with heart failure who die at their usual place of residence is not significantly differently to the national average.

Touching on a point that was made earlier, an important finding was that the estimated percentage of smokers over sixteen in Derby is significantly above the national average 25.7% compared to the national average of 22.1%. This confers to higher risk of developing CHD and CVA, which contribute to the differences between the local and national rates.

More promising data goes to suggest that the percentage of smoking cessation is above the national average. It is not only smoking of course which is a risk factor for vessel disease. Diet is also a major contributor, however, the the estimated percentage of obesity is lower than national average respectively 23.4% vs 24.1%. However, an important study that can arise from this finding is to determine which independent risk factor, saturated fats or smoking cause an increased risk of CHD or CVA.

Derby has a lower stroke mortality than the England average (36.8 v 40.9). Interestingly sources from the Quality Service Framework demonstrate data which reveal that Derby and other similar cities with industry have a lower stroke mortality compared to the other cities in England. The reasons for this would certainly be interesting.

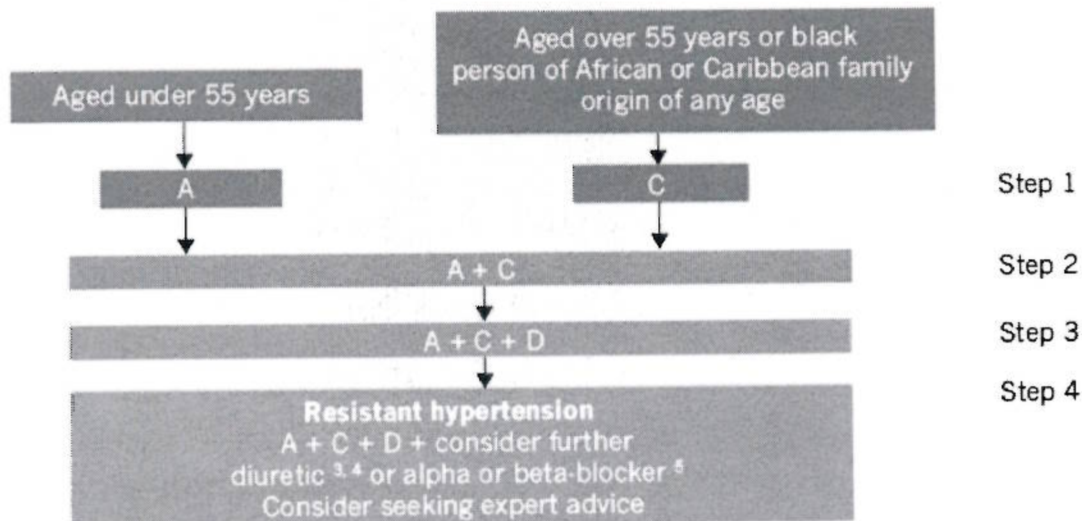
The prevalence range of hypertension across the world is variable. It is as high as 72.5% in parts of Poland, and in some parts of India it is roughly 4%. In Established Market Economies, in countries such as USA, Canada, and Western Europe, the prevalence varies between 20% and 50%. In China the prevalence is around 30%.

In South America and off the coast including the Caribbean islands, the rate varied between 30% to 40%. There are many more examples of the global epidemic that is hypertension. It is an important diagnosis given its role in vascular disease and the development of detrimental co morbidities.

2. Compare how a particular chronic illness, e.g. asthma, is managed in the UK and compare it to protocols to the major cities in the world.

Since my last objective touched upon hypertension, I will discuss its management. It is particularly pertinent given that there have been recent revisions to the protocol.

The following is the current treatment of hypertension in the UK.



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Key: A = angiotensin-converting enzyme (ACE) inhibitor or low-cost angiotensin receptor blocker (ARB)[1]; C = calcium channel blocker (CCB)[2]; D = thiazide-like diuretic; BHS = British Hypertension Society

(1) Choose a low-cost ARB. (2) A CCB is preferred but consider a thiazide-like diuretic if a CCB is not tolerated or the person has oedema, evidence of heart failure or a high risk of heart failure. (3) Consider a low dose of spironolactone[4] or higher doses of a thiazide-like diuretic. (4) At the time of publication (August 2011), spironolactone did not have a UK marketing authorisation for this indication. Informed consent should be obtained and documented. (5) Consider an alpha- or beta-blocker if further diuretic therapy is not tolerated, or is contraindicated or ineffective.

In sum, the approach taken to diagnose and manage hypertension is one which factors the in the severity. The protocol follows a step wise, ladder like progression. If the lowest grade of medication doesn't work, the doctor will escalate the treatment to the next appropriate step. The guideline is jointly formulated by the British Hypertension Society (BHS) and National institute for Clinical Excellence (NICE).

Whilst there are small differences between, the underlying principals are similar. The overall aim of these treatment pathways are to prevent the complications of hypertension and if possible cure the diseases underlying cause. The strategic approach depends on each countries approach to providing health service and the resources available. However the European and American evidence based do certainly have similar parallels.

The dietary advice by the BHS is similar to the American Heart Association (AHA) simple 7 plan is similar to the BHS/NICE guidelines in principal in reducing the BMI, cholesterol levels, smoking and improving ones diet. Addition the NICE/BHS recommend reducing sodium and alcohol levels

3. Health related objective: How can GPs target hard to reach demographics?

There are various ways the GPs overcame these barriers

1. Provision of translators and health advocates
2. Taking out adverts in the local newspapers and magazine
3. Advertisements on local transport
4. Radio broadcast
5. Leaflets at the post office, council offices and other convenient places
6. Home visits and mobile services
7. Drop in clinics

4. Develop understanding of safe prescribing in primary care

To help my colleague and I, the GP brought in the local pharmacist to demonstrate some of the pertinent issues around safe prescribing. More is discussed in the reflective element in the appendix. Some of the main topics that were raised were

1. Methadone prescription
2. Drug overdose
3. Identifying patients were are at risk of drug abuse
4. Smoking cessation services
5. Prescribing in vulnerable patients, including the elderly, the young, and those with co existing medical conditions.

5. Observe health promotion in the community and how GPs are involved in coordinating their care.

Health promotion is achieved in many ways. It is primarily done taking a patient centred approach. This involves building rapport and helping to approach the patient problems and solving them in tandem so that the patient is happy whilst the doctor is able to treat.

This curtailed any negativity and hostility from the patients, as it was on the onus on the patient to direct their management. It also allowed the doctor to progressively address other risk factors which may not be particularly high priority in the patient's life. Other forms of health promotion included information giving and explanation. This includes an easily accessible website and information leaflets at the practise. Things that were addressed includes

1. Safe sex
2. Smoking cessation
3. Lifestyle advice
4. Cervical screens

The GP practise encourages patient to participate with the practise in patient surveys and also by promoting 'hot topics'. These measures are aimed at increased involvement of patients in their own health and promoting a healthier lifestyle. For example, recently health checks were offered at some work places, including taxi drivers as well as holding health promotion clinics in the practise. A particular service offered is HPV vaccine for eligible groups who may be benefit from vaccination.

The reflective element is on a separate document.