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Comorbidity, Our Disease 'Baggage,' Modify the Behavior of the Medical Diseases They Accompany

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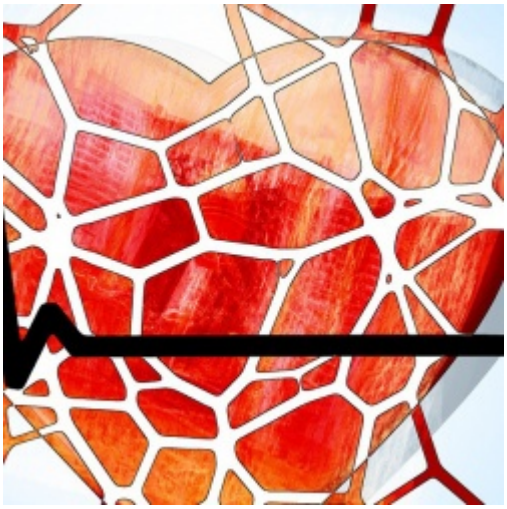

Courtesy of Geralt and Pixabay

One of the fascinating things that being an older physician permits is recognizing the changing shape of the diseases that have captured our professional lives. In my clinical lifetime, I have seen aneurysm surgery go from 4 hours of open surgery and 7 to 10 days in the hospital, to two hours of a “percutaneous procedure” and overnight hospitalization.

Co-morbidities are the diseases that a patient has, think of it like Morley's ghost; comorbidities are the disease baggage we have acquired in life. Usually, one condition has attracted our clinical or academic primary interest. For example, as a vascular surgeon, my primary focus for peripheral arterial and venous disease; the other diseases a patient had coronary artery disease, diabetes or hypertension, were their co-morbidities. Comorbidities surrounding a primary illness, like our shifting preference from checked to carry on baggage, continues to change and may modify the clinical behavior of the primary disease and its treatment. Two papers in PLOS Medicine looks at the comorbidities of cardiovascular disease, how they are changing and their subsequent clinical impact.

Using electronic health records from the United Kingdom Clinical Practice Research Datalink, a roughly 7% cross-section of the population, researchers look at the age, gender, ethnicity and diagnosis of patients. They limited their dataset to patients who had been with a practice for at least one year and were now presenting with ischemic heart disease (chest pain or a heart attack) as well as a stroke or mini-stroke (technically a transient ischemic attack). In all, they looked at 229,205 patients.

Let’s start with the good news, the incidence of these cardiovascular events has decreased by

34% over the last 15 years. The numbers were a bit better for heart problems than stroke issues. The age of onset showed no real change, from 70 to 71 and the preponderance of males over females did not change either. Now that all the good news is out of the way let's get to the bad news.

The number of co-morbidities, those other, not targeted diseases, increased. Having five or more associated conditions increased nearly 3-fold from 6.3% to 24.3% and no surprise getting older was associated with having more medical problems. Women were more likely to be in this group rather than men, and there was a trend to see more multiple comorbidities in patients who were socioeconomically less advantaged.

Much of that burden are diseases we would expect to surround cardiovascular disease, the frequent comorbidities of hypertension, dyslipidemia, diabetes, obesity; what we could term cardiometabolic comorbidities. But 40% of comorbidities were not in this group, they included arthritis, asthma and two significant mental health issues, depression and anxiety. The percentage of patients with these problems differed by gender and age; heart disease travels with a variety of co-morbidities.

It is easy to say that as we get older, we develop more problems. But when the data were standardized for age, that was not the only driver. Other causes remain conjecture. Can it be a lifestyle or perhaps better diagnostics and access to care that accounts for the increases? Gender is involved though as women had a much different profile of comorbidities and their time of onset than men

In a companion paper, researchers looked at another UK database of patients admitted for heart attacks; and again, there were lots of comorbidities, nearly 60% of patients had at least one additional comorbidity. But the research focused on the impact of those comorbidities on mortality. They defined three groupings of comorbidities. A heart attack combined with comorbid heart failure, peripheral arterial disease, and hypertension resulted in the highest mortality, a 2.4 fold increase during the next eight years compared to patients with only peripheral arterial disease. Patients with a heart attack, peripheral vascular disease and hypertension fared somewhat better with a 1.5 fold increase in mortality against those patients with only peripheral vascular disease. More importantly, the data showed, as in the first study, increasing accumulation of comorbidities over the time course of the research and that gender played a role in the comorbidities a patient “collected” – women were far more likely to be in the group with the highest mortality.

As with all studies, limitations apply. Electronic records are not always the most precise and patients not in the health system are not reported; and the mortality data of the second study is for deaths from any cause, not just cardiovascular.

Despite the limitations, there remains at least one take-home message. The reductionist approach to medicine, specialization, has allowed for significant strides in care, even bringing forward this data. But the focus may limit our view. The presence of comorbidities shapes the outcomes of are index disease, in this case, heart attacks and chest pain. It is not merely one homogenous group. It is a variety of small groups, defined by gender and by the other disease “baggage” the patients bring with them. To personalize care, it is no longer sufficient to treat the specialist's problem and

ignore the other issues. Customizing care will require us to coordinate care much more than we have so far.

Source:

Patterns and temporal trends of comorbidity among adult patients with incident cardiovascular disease in the UK between 2000 and 2014: A population-based cohort study. Plos Medicine DOI: 10.137/journal.pmed.1002513

Multimorbidity and survival for patients with acute myocardial infarction in England and Wales: Latent class analysis of a nationwide population-based cohort Plos Medicine DOI: 10.1371/journal.pmed.1002501
