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Coronary artery disease and the contours of pharmaceuticalization

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ABSTRACT

Coronary artery disease (CAD) has dominated mortality for most of the past century, not just in Europe and North America but worldwide. Treatments for CAD, both pharmaceutical and surgical, have become leading sectors of the healthcare economy. This paper focuses on the therapeutic landscape for CAD in the United States. We hope to add texture to the broader conversation of pharmaceuticalization explored in this issue by situating pharmaceutical therapies as just one element in the broader therapeutic terrain, alongside cardiac surgery and interventional cardiology. Patients with CAD must navigate a therapeutic landscape with three intersecting paths: lifestyle change, pharmaceuticals, and surgery. While pharmaceuticals are often seen as a quick fix, a way of avoiding more difficult lifestyle changes, it is surgery and angioplasty that promise patients the quickest fix of all. There also is another option, often overlooked by analysts but popular among physicians and patients: inaction. The U.S. context is often critiqued as a site of excessive treatment with respect to both drugs and procedures, and yet there is deep stratification within it – over-treatment in many populations and under-treatment in others. People who experience the serious risks of CAD do so in a racialized terrain of durable preoccupations with difference and unequal access to care. While the pharmaceuticalization literature disproportionately attends to lifestyle drugs, which some observers consider to be medically inappropriate or unnecessary, CAD does remain the leading cause of death. Thus, the stakes are high. Examination of the pharmaceuticalization of CAD in light of surgical treatments and racial disparities offers a window into the pervasiveness and persuasiveness of pharmaceuticals in an increasingly consumer-driven medicine, as well as the limits of their appeal and their reach.

1. Introduction

Coronary artery disease (CAD) has dominated mortality for most of the past century, not just in Europe and North America but worldwide. Treatments for CAD, both pharmaceutical and surgical, have become leading sectors of the healthcare economy. This paper focuses on the therapeutic landscape for CAD in the United States, with particular attention to racialized patterns in the access and utilization of pharmaceutical and surgical interventions. The U.S. context is often critiqued as a site of excessive treatment with both drugs and procedures, and yet there is deep stratification within it – over-treatment in many populations and under-treatment in others. Structural racism produces embodied inequalities in which people of color disproportionately suffer from heart disease, but privileged groups are the recipients of a disproportionate share of the therapeutics. Drugs, therapeutics, and lifestyle change all share a common limitation, in that they focus on individual interventions rather than on the social changes that would have a larger impact on reducing health inequalities. Scholars have written extensively about the pharmaceutical aspects of the individualization of response to disease, but it is important to look at pharmaceuticals as but one part of broader therapeutic responses.

We hope to extend the conversation about pharmaceuticalization explored in this issue by situating pharmaceutical therapies as one element in a broader therapeutic terrain, alongside lifestyle interventions, cardiac surgery, and interventional cardiology. This perspective clarifies the pervasiveness and persuasiveness of pharmaceuticals in an increasingly consumer-driven medicine, as well as the limits of their appeal. Grounded in a critical reading of the medical and social science literature about CAD, this paper describes how CAD came to be seen as a disease that could be managed not just with pills but also with procedures. We provide illustrative examples to explore the pharmaceuticalization and surgicalization of CAD. The paper goes on to discuss the racial

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stratification of each of these therapeutic modalities. It concludes with discussion of the implications of the morally-laden category of CAD in this context of unequal risk and unequal access. Our central argument is that the expansionary tendencies of pharmaceuticalization can only be understood in light of pharmaceuticals' alternatives, adjuncts, and constraints.

As coronary artery disease rose to prominence in the United States in the early twentieth century, early medical treatments focused on providing relief during acute attacks, with nitrates to dilate blood vessels and opiates to treat pain. Doctors also encouraged patients to prevent attacks by avoiding physical stress, emotional stress, and other triggers. As epidemiological studies produced increasing evidence about risk factors, especially diet, exercise, and smoking, doctors began to advise patients about lifestyle changes that might slow the course of atherosclerosis. Doctors came to see CAD not as the inevitable consequence of aging, but the contingent pathology of aging in modern society, with its cigarettes, bountiful diet, and sedentary lives. Many believed that, through lifestyle change, patients had the power to prevent the disease altogether. CAD would become important in the emerging understandings of social determinants of health, but doctors and patients also sought to manage the disease through individual lifestyle and clinical interventions. Two strategies of medical intervention emerged in parallel: pharmaceutical and surgical.

2. CAD as a site of pharmaceuticalization

As CAD rose to prominence, it became an iconic site for pharmaceutical development and consumption. The history of pharmaceutical treatment for CAD is a paradigmatic example of the history of the blockbuster drug, from thiazides and ß-blockers to statins and platelet inhibitors. The succession of blockbusters demonstrates both the complex interplay between disease theory and pharmaceutical practice, and the impact of pharmaceutical marketing, first to physicians and now directly to consumers.

In the framework laid out by Williams et al. (2011, p. 711), "pharmaceuticalisation denotes the translation or transformation of human conditions, capabilities and capacities into opportunities for pharmaceutical intervention." CAD has been pharmaceuticalized in two ways. One approach addresses risk factors that are imperceptible to patients but assessable by physicians: blood pressure, serum cholesterol, and newer biomarkers such as c-reactive protein. The other manages acute symptoms and risk once CAD has taken root, and includes both the earlier therapeutics that increased blood flow to the heart and eased pain (e.g., nitrates and opiates) and newer classes of drugs that quiet inflammation or prevent platelet activation and aggregation.

As one new drug class after another emerged from the 1950s into the 1990s, CAD demonstrated the power of drugs to define diseases and to make them relevant. Narrating the history of the first diuretic for hypertension in the 1950s and 1960s and the first statin for high cholesterol in the 1980s, Jeremy Greene (2007) has shown how the availability of these drugs stabilized the notions of these concepts as disease-like conditions of risk that should be treated. In the decades since, drugs have continued to redefine disease. For example, thresholds for blood pressure and cholesterol levels have been lowered with successive professional guidelines, effectively expanding the ranks of candidates for treatment.

Statins and antihypertensives are key players in the pharmaceutical culture that Joseph Dumit (2012) has called "mass health," in which (1) symptoms are no longer necessary to define disease, (2) clinical trials define risk, and (3) it is normal to be on "drugs for life." As Dumit shows, when patients and physicians recognize a modifiable risk factor, they face a moral obligation to take action to lower that risk. CAD risk factors such as high cholesterol and hypertension are extremely widespread, estimated to affect 26.7% and 30% of the U.S. adult population over the age of 20 (National Center for Health Statistics, 2013, p. 205). In America today the most concrete and convenient way to address them is to prescribe pills. Even though much of the distribution of heart disease risk follows social determinants of health rather than individual characteristics or behaviors (Marmot and Wilkinson, 2006; Kreatsoulas and Anand, 2010), the obligation to take action in the face of that risk and suffering falls overwhelmingly on individuals, and adding a pill to a daily regimen is far simpler than transforming long-established habits of diet and physical activity. As anthropologists of pharmaceuticals have noted, "it is easier to satisfy the patients with drugs than with words" (Van der Geest et al., 1996, p. 159). These drugs have been extraordinarily successful, in terms of both profitability and numbers of prescriptions. According to the Centers for Disease Control, high cholesterol drugs were the most commonly prescribed therapeutic class in the U.S. between 2007 and 2010, with 12.5% of the population receiving at least one prescription in the past thirty days (National Center for Health Statistics, 2013, p. 284).

Even as cardiac pharmaceuticals have been emblematic of the ascendance of this pharmaceutical logic and of the industry's profitability, they are now reaching certain limits. Whereas "medicalization and pharmaceuticalization theorists alike tend towards an overly teleological fixation on the expansion and increase of pharmaceutical prescriptions and uses" (Abraham, 2010, p. 605), CAD therapeutics may present an instance of pharmaceutical stagnation. Powerful pharmaceuticals already exist that can intervene against each of the key pathophysiological pathways. While additional targets for pharmaceutical intervention have been identified, new products are not imminent. Heart disease is widely considered to be a saturated disease category (Pollock, 2011). Since many of the landmark blockbusters are no longer under patent protection, they face generic competition. Before it went off patent in 2011, the statin Lipitor was by far the top drug in the world in terms of revenue, peaking at $13.2 billion in global sales in 2010 (IMS Health, 2012). The newer statin Crestor remains in the top ten drugs in global sales, but the list is now dominated by drugs for asthma, autoimmune disease, mental illness, and cancer. The CAD drug sector faces increasing stagnation.

With the exception of quick-acting nitroglycerin for angina, drugs for CAD have never been the same kind of "quick fixes" as other iconic examples of pharmaceuticalization. Penicillin remains the archetypal "magic bullet": a single dose can cure a patient of syphilis (even though it did not solve the social problem of the disease – see Brandt, 1987). Benzodiazepines, most famously "mother's little helper" Valium, provided rapid relief for the "psychic tension" of unhappy housewives (Herzberg, 2010). Diuretics, beta-blockers, antihypertensives, and statins, in this context, are far less powerful. They often relieve no symptoms and their impact on the disease cannot be discerned by their consumers. The health effects emerge imperceptibly, over the long term, and only as an amelioration of risk statistics rather than as a guarantee of prevention of adverse events. Impact on individual health is often essentially abstract: for statins in low risk patients – who form one of the largest markets for the drugs – it might be necessary to treat 96 patients for five years to prevent a single death (Taylor et al., 2013, p. 11). A pharmaceutical regimen may be quicker to implement than dietary or other lifestyle change, less expensive, and less demanding of patient effort, but the fix can be notably unsatisfying.

Moreover, in prescription guidelines and in direct-to-consumer ads, drugs for CAD are routinely described as supplements to lifestyle change, rather than as alternatives to it. Consumers read these lifestyle messages in diverse ways (Frosch et al., 2011), but the drugs are never completely detached from the moral obligations of