Editorial

The Hidden Story of Nonadherence with Asthma Therapy: For a Few Dollars More?

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The World Health Organization (WHO) has estimated that as many as half of all patients prescribed medications for chronic disease are not taking their medication as prescribed.\textsuperscript{1} In one country alone, such nonadherence may contribute to approximately 125,000 preventable deaths and up to $289 billion of excess costs.\textsuperscript{2} Given asthma’s symptom variability, its error-prone delivery systems, and reliance on patient self-monitoring, it should not surprise us that inhaled asthma drugs are among the medications with the lowest rates of nonadherence.\textsuperscript{3} But why are people actually nonadherent to their treatment? According to the WHO, we should consider 3 broad categories of nonadherence: (1) erratic (more commonly known as forgetfulness), (2) unwitting (eg, using reliever as preventer, poor self-management, and poor inhaler technique), and (3) intelligent nonadherence (eg, nonintake due to fear of steroids or medication dependence).\textsuperscript{4} There is considerable awareness of the first 2 types, also called “unintentional” forms of nonadherence, and a substantial body of literature concerning solutions (reminders, structure and education, and so on).\textsuperscript{4,5} Yet, the last type is by far the most complex and challenging form of nonadherence. This type is also known as “intentional” nonadherence. That is, on the basis of a well-thought benefit-risk balance, patients are making a conscious, reasoned decision to alter their prescribed regimen or worse, not taking their medication at all. The trade-off between beliefs (and fears) concerning medicines and the necessity of medicines plays an important role, and has been extensively studied and captured in behavioral frameworks and questionnaires.\textsuperscript{6,7} Far less studied however is the extent to which medication costs could contribute to this challenging “phenotype” of intentional nonadherence.

In this issue of the Journal of Allergy and Clinical Immunology: In Practice, Laba et al\textsuperscript{8} shine light on the extent of underuse of asthma medication due to costs and, equally important, which factors were associated with this behavior.\textsuperscript{8} It is noteworthy that the study took place in Australia, a country with a universal health care system but one in which medication costs may be borne in whole or in part by patients. For their study, the authors surveyed more than 1400 adults and parents of children with asthma, with a survey completion rate greater than 90%. Remarkably, even in a first-world country like Australia, costs were identified as an important factor for asthma medication underuse. Around 25% of respondents reported not filling asthma prescriptions, with costs as the main reason. Moreover, more than half of adults reported skipping doses and a third of parents reported decreasing doses to make prescriptions last longer. Factors associated with cost-related underuse ranged from demographic (eg, young, male adults) to social (eg, less engagement—or more comfortability to talk—with prescriber), psychological (eg, concerns about medicines), and clinical (eg, poor asthma control).

Laba et al should be applauded for successful completion of one of the first large asthma studies that highlights the importance of economic barriers for nonadherence. Nonetheless, some study limitations should be acknowledged. First, self-reported measures of adherence may overestimate true adherence. In studies where self-report rates were compared with objective measures, such as those obtained through electronic monitoring or prescription refills, self-report rates were consistently higher.\textsuperscript{9,10} This study might therefore underestimate the magnitude of the problem. However, the anonymity inherent in the survey methods would be expected to minimize this effect. Second, we know only what the patients have told us by self-report and not whether it truly explains the underlying reason for nonadherence. In other words, are medication costs an excuse to avoid using an inhaled corticosteroid for a patient who is fearful of inhaled corticosteroid and who would not use them if they were free? This alignment aligns with the study findings that reporting “having concerns about medicines” was strongly associated with cost-related underuse, but “concession card
status” or “income” was not. Third, the questionnaire had a 12-month look-back period, which could have resulted in recall bias. Finally, the authors noted that the extent of cost-related underuse was different from previous findings in, for example, the United States. Therefore, because of country differences in populations, risk factors, health care system organization, and financing, we should realize that the study’s findings may not be directly generalizable across borders.

Minor limitations notwithstanding, what are the implications of this study? At worst, failure to consider nonadherence due to medication costs could lead to increasing rates of asthma deaths. However, deaths from asthma are rare, at least in high-income countries such as Australia. As such, a more common consequence is that the patient, poorly controlled due to nonadherence, is more likely to require urgent care, typically in an emergency department or hospital ward. The Finnish practice of offering special reimbursement for drug costs when patients suffer from persistent asthma suggests that such consequences are readily avoided when the costs of therapy are recognized and addressed. Introduction of biologic therapies for severe asthma portends a new risk when the costs of basic medications are overlooked. Patients who have inadequate funding for common, relatively affordable, inhaled medications may appear to have severe asthma and may require health care system funding for expensive biologics. In both scenarios, the health care system that fails to fund effective preventive medications will be “penny wise, pound foolish.”

In many countries with universal health coverage, including Australia, medications are not completely free of charge and often some sort of co-payment is in place. Is reducing or removing co-payments the solution? Given the results of this study, one could argue that this will remove at least one barrier that is currently preventing proper adherence. However, a small co-payment may make patients more aware of the costs of health care, make them value medications more, and therefore make them more adherent. Systematic evaluation of the true impact of health policies such as co-payments remains however challenging due to the lack of options for patient randomization and the large heterogeneity in patients and medications.

Looking forward, the challenge for researchers will be to explore the area of cost-related underuse more thoroughly and to test workable solutions for the asthma medication nonadherence epidemic. For example, some of the promising near-future tools include technological aids such as electronic inhaler monitoring devices and linked health platforms that may enable more personalized consultations and interventions. In the meantime, clinicians must make it a routine to discuss medication costs with their patients, preferably using a shared decision-making approach. In addition, physicians should learn the costs of the medications they prescribe. Of note, we feel that the onus should not be borne entirely by physicians—there are roles for other health care team members including pharmacists, nurses, and respiratory educators. Finally, policymakers and health economists should ask themselves the question whether co-payments are as cost-effective as they appear or whether far greater clinical and economic benefits may be achieved by spending a few dollars more.

REFERENCES