Compliance, Adherence, and Concordance*

Implications for Asthma Treatment

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Good-quality outcomes in asthma hinge not just on the availability of medications but also on their appropriate use by patients: optimal "self-management." In asthma, low rates of adherence to prophylactic (preventer) medication are associated with higher rates of hospitalization and death. Many patients choose not to take their medication because they perceive it to be unnecessary or because they are concerned about potential adverse effects. Approximately one third of asthma patients have strong concerns about adverse effects from inhaled corticosteroids (ICS). These concerns are not just related to the experience of local symptoms attributed to ICS side effects, but also include more abstract concerns about the future, arising from the belief that regular use of ICS will result in adverse long-term effects or dependence. We need more effective ways of eliciting and addressing patients' concerns about ICS. The development of ICS options with an improved safety profile remains a key objective. However, the ideal solution is not just pharmacologic. We also need more effective ways of communicating the relative benefits and risks to patients in order to facilitate informed adherence. Clinicians must be prepared to work in an ongoing partnership with patients to ensure that they are offered a clear rationale as to why ICS are necessary and to address their concerns about potential adverse effects. This approach, based on a detailed examination of patients' perspectives on asthma and its treatment, and an open, nonjudgmental manner on the part of the clinician, is consistent with the idea of concordance. ***(CHEST 2006; 130:65S–72S)***

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Abbreviation: ICS = inhaled corticosteroids

Most health-care resources in developed countries are directed toward the management of chronic illness, such as cardiovascular disease, cancer, diabetes, asthma, and mental health. Asthma management has improved markedly over the last 50 years, largely due to the introduction of inhaled corticosteroids (ICS) in the early 1980s, agents that are now considered to be the "cornerstone of therapy for persistent asthma of all degrees of severity in adults and children."[1] Nevertheless, good-quality outcomes in asthma (and in other chronic conditions) hinge not just on the availability of medications

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but also on their appropriate use by patients: optimal "self-management." Both the efficacy of a medication and patient adherence to the therapeutic regimen influence the effectiveness of a treatment.[2] This article will review the underlying reasons for patient nonadherence and describe the role played by clinicians in promoting optimal medicine management.

Compliance, Adherence, and Concordance

The term *compliance* has mostly been superseded by the term *adherence*, a similar concept but one that has fewer negative connotations regarding the physician/patient relationship (Table 1).[3] Use of the term *compliance* has been strongly criticized, as it was thought to convey a negative image of the relationship between patient and prescriber, in which the role of the prescriber was to issue the instructions and the patient's role was to follow the doctor's orders. Noncompliance, therefore, could be interpreted as patient incompetence in being unable to follow instructions, or as deliberate, self-sabotaging behavior. *Adherence* was introduced in an attempt to recognize a patient's right to choose, and to remove the concept of blame. *Concordance*[4] is a relatively recent term that is predominantly used in the United Kingdom (Table 1). Its definition has changed over time from one that focused on the consultation process in which doctor and patient agree on therapeutic decisions that incorporate their respective views, to a wider concept that stretches from prescribing communication to patient support in medicine taking. It recognizes the need for patients and doctors to work together to reach agreement, and acknowledges that patients and doctors may (potentially) have opposing views. How we deal with this presents a major challenge for medicine, particularly in the management of chronic illnesses, such as asthma. Concordance is sometimes used, incorrectly, as a synonym for adherence.

The Extent of Nonadherence

A World Health Organization report[5,6] suggests that 50% of patients from developed countries with chronic disease do not use their medications as recommended (see further discussion below). In developing countries, when taken together with poor access to health care, lack of appropriate diagnosis, and limited access to medicines, poor adherence seriously threatens any effort to tackle chronic illness.[5] In asthma, adherence rates are particularly problematic, generally ranging from 30 to 70%,[7] with $< 50\%$ of children adhering to their prescribed inhaled medication regimens.[8] This is greatly concerning, given the vulnerability of these patients to progressive, irreversible airways obstruction.

From a purely financial perspective, approximately £230 million of medicines are returned to pharmacies in the United Kingdom each year, with a great deal more disposed of by patients themselves.[6] In the United States, nonadherence to medical regimens has been estimated to cost the US health-care system $100 billion per year. Overall, therefore, the outcome of nonadherence is loss: loss of opportunities for patients to improve their health, and loss of medication by health-care systems, with the subsequent effect of increased morbidity.[6]

Understanding Nonadherence

Dispelling Common Myths

Unless health-care providers identify the underlying causes of patient nonadherence, it will be difficult to determine an appropriate interventional strategy. Nonadherence is not significantly related to the type or severity of disease, with rates of between 25% and 30% noted across 17 disease conditions.[9] Furthermore, providing clear information—although essential—is not enough to guarantee adherence.[10] Likewise, a plethora of studies have failed to identify clear and consistent relationships between adherence and sociodemographic variables, such as gender and age in adults. Adherence is positively correlated with income when the patient is paying for treatment[11] but not with general socioeconomic status.[9]

Another commonly held myth is that of the "nonadherent patient"; actually, there is no such thing! There is little evidence that adherence behaviors can

Table 1—*Terminology: Concordance and Compliance/Adherence Are Often Confused*

Compliance	The extent to which a patient's behavior matches the prescriber's advice
Adherence	The extent to which the patient's behavior matches *agreed* recommendations from the prescriber. It has been adopted by many as an alternative to compliance, in an attempt to emphasize that the patient is free to decide whether to adhere to the doctor's recommendations and that failure to do so should not be a reason to blame the patient. Adherence develops the definition of compliance by emphasizing the need for agreement
Concordance	A complex idea relating to the patient/prescriber relationship and the degree to which the prescription represents a shared decision, in which the beliefs and preferences of the patient have been taken into consideration.