

# IMPACT OF ADHERENCE ON ANGINA CONTROL

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**S**table angina is a common and potentially life-threatening disease process. Therefore, its recognition and appropriate management are very important to lower its risks. Current guidelines include pharmacological as well as mechanical treatment with PCI for symptom relief when there is significant narrowing of the epicardial coronary arteries.<sup>1</sup> Several studies have shown the multifactorial nature of myocardial ischemia and the need to develop a more tailored approach related to the underlying mechanism of ischemia. This result has been further emphasized in the recently published ORBITA trial, the only blinded, randomized, placebo-controlled trial on PCI. The ORBITA trial showed, in a small group of patients with single vessel disease, that even with severe coronary stenosis, exercise capacity and symptoms are not improved significantly with PCI vs a placebo intervention.<sup>2</sup>

Different drugs are currently used in the management of angina, meaning that the medical treatment strategies must be correctly implemented. Compliance (or adherence) as it relates to health care is the extent to which a person's behavior coincides with medical or health advice provided by a health care professional. No medicine can be effective if a patient does not take it as prescribed. Consequently, the adherence of patients with stable angina to antianginal therapy is a key factor for controlling the disease. It is known that, among patients with chronic illnesses, approximately 50% do not take medications as prescribed.<sup>3</sup> This poor adherence to medication leads to increased morbidity and death, and it is estimated to incur costs of approximately \$100 billion per year.<sup>4</sup> The adherence of patients with stable angina to antianginal therapy is the key factor for controlling the disease. It is estimated that the level of adherence to prescribed medication in patients with stable angina follows the same pattern as other chronic illnesses; therefore, up to 50% of the patients will drop some of the medication up to 1 year after they have been put on the drugs.

Therefore, noncompliance is a very serious problem for the long-term treatment of patients with stable angina. There are several reasons for noncompliance, which may change from individual to individual and needs to be taken into account by the doctor when managing patients with angina. Some of these factors include:

1. Lack of communication by the doctor on the advantages of being on a certain medication at the time of the prescription.
2. Development of undesirable side effects, such as headache, nausea, tinnitus, sexual dysfunction, etc, that will lead to withdrawal of medication by the patient (many times the side effects are more limiting than the symptoms resultant from the disease process itself).
3. Educational level of the patient.
4. Cost issues.

Accurate assessment of adherence behavior is necessary for an effective and efficient treatment plan and for ensuring that changes in health outcomes can be attributed to the recommended regimen. In addition, decisions to change recommendations, medications, and/or communication style to promote patient participation depend on a valid and reliable measurement of the adherence. Indisputably, there is no “gold standard” for measuring adherence behavior.<sup>5</sup> A variety of strategies have been reported in the literature. Although objective strategies may initially appear to be an improvement over subjective approaches, each has drawbacks in the assessment of adherence behaviors. There are methods that can be used to monitor compliance, such as using prescription reminders and asking patients to take note of the pills taken each day. Some patients, for instance, like to use pill boxes, which can help improve compliance. Remaining dosage units (eg, tablets) can be counted at clinical visits; however, counting inaccuracies are common and typically result in overestimation of adherence behavior, and important information (eg, timing of dosage and patterns of missed dosages) is not captured using this strategy. Another method that has been tested is the electronic monitoring device (medication event monitoring system), which records the time and date when a medication container was opened, thus better describing the way patients take their medications.<sup>6</sup>

Patient nonadherence to prescribed antianginal therapies has several potential consequences that can be summarized by two major aspects: (i) the patient is not obtaining the proven benefits regarding symptom relief (ie, better quality of life and better outcomes) that translates into a prolonged event-free survival; and (ii) the chances of having an event increases, which may have major consequences for the patient (including life-threatening conditions) and an increase in the economic burden of the disease process for society as a whole. Poor adherence compounds the challenges of improving health in poor populations, resulting in waste and underutilization of already limited treatment resources.

To improve medication adherence, the multifactorial causes of decreased adherence must be understood. The WHO classifies these factors into five categories: (i) socioeconomic factors; (ii) factors associated with the health care team and

system in place; (iii) disease-related factors; (iv) therapy-related factors; and (v) patient-related factors. In broader terms, these factors fall into the categories of patient-related factors, physician-related factors, and health care system/team building-related factors. Other factors may influence noncompliance in patients with angina, some are related to the individual patient, such as age, mental status, socioeconomic condition, and literacy, while others are related to the clinical condition of the patient, such as the presence of other comorbidities (eg, renal failure) or the concomitant ingestion of multiple medications, which will affect the ability of the patient to keep taking the prescribed medication regularly.

One study, which included 870 patients, assessed the relationship between adherence to treatment with trimetazidine modified release (MR) by patients with stable angina and the frequency (risk) of emergency medical care.<sup>7</sup> They consistently included patients with stable angina in primary health care. The results of treatment for 16 weeks were assessed according to number of patients with angina attacks three times per week or more, the use of short-acting nitrates, and treatment with generic trimetazidine. To strengthen the antianginal therapy, generic trimetazidine was replaced with the original trimetazidine MR. Adherence was considered relatively high if the patients were taking 80% to 120% of the recommended dose of the drug (70 mg/day). The effectiveness of treatment was evaluated by the frequency of emergency hospitalizations and/or ambulance calls due to pain, discomfort, tightness in the chest, or ischemic changes on the electrocardiogram. The study showed that replacing generic trimetazidine with original trimetazidine MR in patients with a high frequency of angina attacks could achieve a significant antianginal effect.<sup>7</sup>

Education is essential to provide the most complete information to the patient about the underlying disease condition and the different treatment options available. The rational, objectives, and potential side effects of a certain medication must also be explained very well because these are the main reasons why many patients stop their medication.

One of the most recognized solutions to improve compliance to recommended therapies relies on the use of a single pill containing associated drugs because this reduces the number of pills the individual patient has to take, which improves compliance. This method is particularly relevant in the elderly patient population with other disease conditions who consequently need to take other medications. It is also important to reduce, as much as possible, the number of times the patient needs to take the medication; once a day medications will improve compliance.

Given the enormous complexities involved in medication adherence, research on improving adherence has been challenging and generally focused on single-

disease states. A recent Cochrane review of 78 randomized trials showed that no simple intervention and relatively few complex ones were effective at improving long-term medication adherence and health outcomes,<sup>8</sup> highlighting the difficulty in improving medication adherence. The multifactorial nature of poor medication adherence implies that only a sustained, coordinated effort will ensure optimal medication adherence and realization of the full benefits of current therapies. Current recognition of the importance of medication adherence has resulted in the development of many useful internet-based resources.

In conclusion, adherence to therapy is an essential component in the management of angina, and the implementation of different strategies that can help improve adherence is of the utmost importance, which will certainly provide better health care for these patients. ■

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