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EDITORIAL

Adherence to asthma medication: a question of ability?

See linked articles by Emilsson *et al*. on pg 141 and Roy *et al*. on pg 148

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As identified in a recent European Union directive,[1] improving adherence is one of ten priorities for reducing the burden of asthma on individuals and society. But how can we achieve this in practice? Systematic reviews show that effective interventions remain elusive. In a recent Cochrane review of 13 studies in asthma, six reported improvements in adherence – and these improvements were modest and short-lived.[2] However, these studies demonstrate that adherence can be improved; adherence is a modifiable behaviour, rather than a fixed characteristic, but we need more innovative and effective interventions to support it. We can only achieve this through a clear understanding of the patient's perspective and the reasons for non-adherence, and by systematically developing and testing interventions.[3]

Over the last decade or so, research into patients' perspectives of asthma and its treatment has improved our understanding of non-adherence and has helped develop pragmatic theoretical models to guide interventions.[4] The Perceptions and Practicalities Approach to adherence interventions,[3] recently endorsed by the National Institute for Clinical Excellence (NICE) in the UK,[5] suggest that interventions to support adherence will be more effective if they are tailored to the needs of the individual and address the salient perpetual factors (e.g. beliefs, preferences and emotions) and practical factors (e.g. capacity and resources) affecting our *motivation* to start and continue with treatment as well as our *ability* to follow the agreed regimen. We are much more likely to take the treatment if we are convinced that it is necessary to maintain or improve our health now and in the future, have few concerns about negative effects, and can overcome the practical difficulties in following the regimen (e.g. forgetting, difficulties using the administration device, and affording co-payments).[6]

Two studies in this issue of the *PCRJ* contribute to our understanding of perceptual and practical barriers to adherence in asthma. Emilsson and colleagues[7] examine the role of personality traits and beliefs about medicines on adherence to asthma. The authors define personality as '*dimensions of individual differences in tendencies to show consistent patterns of thought, feelings and actions*'. Investigating the role of personality in adherence addresses the interesting question of whether there are certain trait characteristics that might predispose someone to adhere or not adhere to treatment. The relatively few studies in this area have typically explored direct associations between personality and adherence with conflicting results. Emilsson and colleagues take an interesting and innovative approach; they apply a theoretical framework of how personality might influence adherence[8] which recognises that the influence of personality might be indirect. For example, our personality might affect the way in which we think about treatment and our tendency to develop positive or negative beliefs about it, as well as how effective we are at overcoming practical difficulties and developing effective routines. The findings of their study in 35 Swedish adults with asthma are consistent with this theoretical approach. In essence, personality was not directly associated with reported adherence but did relate to the key beliefs about asthma treatment that have been associated with adherence across studies.[3] All five personality dimensions (Extraversion, Openness, Neuroticism, Agreeableness and Conscientiousness) were correlated with a validated measure of how patients judge their need for treatment relative to their concerns about potential adverse effects (the necessity concerns differential), which in turn was related to reported adherence. The authors also presented data between gender analyses, but it is difficult to interpret these due to the small sample size (only 10 men).

Roy and colleagues[9] investigated associations between inhaler device, administration technique and adherence to inhaled corticosteroid (ICS) treatments in a well-designed study of 270 Americans with asthma. Those prescribed dry powder inhalers (DPI) had higher reported adherence than those prescribed metered-dose inhalers (MDI). In a thorough analysis, these effects were shown to be independent of inhaler technique (which was a cause for concern in both MDI and DPI groups) after adjusting for potential demographic and clinical confounders. The reason for this association is unclear. However, it may have more to do with the content of the inhaler than with the device itself. In this study the DPI contained both long-acting β_2-agonist (LABA) and ICS, whereas the MDI contained ICS alone, and patients may have experienced more immediate symptomatic benefit with the ICS/LABA combinations than with ICS alone. Concrete symptom experiences may reinforce patients' perceptions of treatment benefit and necessity and this in itself may influence adherence.[10,11]

So what do these studies imply for the design of interventions to support adherence, and for clinical practice? Emilsson and colleagues[7] have made an important contribution to our understanding of the role of personality in adherence. However, we must be careful not to over-interpret the results of the study. Before including personality assessments as part of the work-up in adherence assessment we need a better understanding of how specific attributes influence treatment perceptions and other antecedents of adherence/non-adherence such as goal setting and implementation. Moreover, we need to prioritise factors that can be changed by intervention. For example, although it is possible to influence medication necessity beliefs and concerns,[12] personality characteristics are generally considered to be fixed traits. Although personality assessments might allow us to target adherence interventions we still need to identify and address the salient perceptual and practical barriers leading to non-adherence. For this reason it is not yet clear whether including personality assessment would add significantly more value to simply assessing necessity beliefs and concerns.

Likewise, we cannot assume from the findings of Roy *et al*.[9] that prescribing a DPI will improve adherence. Simplistic 'one size fits all' solutions are unlikely to work. Rather, the challenge is to recognise that patients differ in their perceptions of the illness and its treatment, and in their capacity and resources to adhere to treatment. Understanding the patient's perspective of adherence and taking a 'no blame' approach is essential. We have the tools to identify non-adherence and the reasons for non-adherence,[13] and we need to apply them to enhance the existing skills of practitioners. Developing more effective methods for helping patients get the best from asthma treatments is a key priority for research and practice.

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Conflict of interest declaration

None.

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