

The Association between Poorer Cognitive Function and Reduced Objectively-Monitored Medication Adherence in Patients with Heart Failure: “I forgot”—Memory and Medication Adherence in Heart Failure

Running head: Memory and Medication Adherence

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In an interesting article published in this issue of the journal Dolansky and colleagues<sup>1</sup> report an association between memory and medication adherence in a sample of community-dwelling adults with reduced ejection fraction heart failure (HF<sub>r</sub>EF). They point out that subclinical cognitive impairment is common and the medication regimen typical of patients with heart failure is complex and prone to error. After only 21 days of monitoring medication adherence Dolansky et al documented that 47% of their sample of 309 patients failed to meet a basic level of adherence (80% of days compliant with the prescribed regimen). Major strengths of this study include objectively measured medication adherence using electronic monitoring and use of a neuropsychological battery to assess cognition. Both approaches reflect the gold-standard in measurement approaches. The major weakness of the study is the short duration of measurement, but a longer duration would probably only increase the number of patients found to be nonadherent after the novelty of the measurement device wears off. Thus, these results provide an enticing window into an area with great potential for intervention.

The investigators posed the question: What cognitive domains are associated with medication nonadherence in adults with heart failure? Standardized neuropsychological measures were used to assess attention, executive function, and memory. In unadjusted analyses all three domains were associated with nonadherence but after adjusting for demographic, clinical, and psychosocial variables, only memory predicted nonadherence. Recognizing that these three central cognitive processes are intertwined as predictive of higher-level cognition,<sup>2</sup> the finding that memory stands out as the primary predictor of medication nonadherence is important. We<sup>3</sup> and others<sup>4</sup> have also found that forgetting is a common reason for medication nonadherence in adults with heart failure, so these results have face validity.

The authors conclude that future studies should examine the link from cognitive impairment and medication nonadherence to clinical outcomes such as hospitalization and mortality.<sup>1</sup> I disagree with this conclusion because we already know that medication nonadherence is associated with hospitalization.<sup>5</sup> Instead, I would encourage these investigators and others to focus on finding ways to address the subclinical cognitive impairment now recognized as prevalent in these patients.

Surprisingly few investigators have tested interventions addressing the memory problems experienced by patients with heart failure. Approaches tested in this population include computerized auditory cognitive training,<sup>6</sup> prospective memory training,<sup>7</sup> and nurse-enhanced computerized cognitive training.<sup>8</sup> In other populations promising approaches include drug-delivery devices that incorporate dose-memory and dose-reminder functions,<sup>9</sup> exercise,<sup>10</sup> and cognitive stimulation.<sup>11</sup> Others have argued that improving self-efficacy may be more important than improving cognition.<sup>12</sup> These interventions and others require further testing to address the issue of memory loss in patients with heart failure. I am not naïve in thinking that this line of investigation will be easy, but interventions addressing memory may have the most potential for improving outcomes and the lives of these patients.

## References

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