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REFERENCES

1. Gazzerro E, Andreu AL, Bruno C. Neuromuscular disorders of glycogen metabolism. Curr. Neurol Neurosci Rep 2013;13:333.

2. Maron BJ, Maron MS, Semsarian C. Genetics of hypertrophic cardiomyopathy after 20 years: clinical perspectives. J Am Coll Cardiol 2012;60:705–15.

3. Romá-Mateo C, Aguado C, García-Giménez JL, Knecht E, Sanz P, Pallardó FV. Oxidative stress, a new hallmark in the pathophysiology of Lafora progressive myoclonus epilepsy. Free Radic Biol Med 2015;88:30–41.

4. Wick R, Byard RW. Mechanisms of unexpected and/or sudden death in Lafora disease. Forensic Sci Int 2006;163:144–7.

5. Criado O, Aguado C, Gayarre J, et al. Lafora bodies and neurological defects in malin-deficient mice correlate with impaired autophagy. Hum Mol Genet 2012;21:1521–33.

Directly Observed Therapy

A Possible Tool to Tackle Medication Nonadherence in the CVD Epidemic

The recent paper by Ferdinand et al. (1) highlights the morbidity and economic burden of medication nonadherence for cardiovascular disease (CVD). Several barriers to medication compliance exist, of which prescription complexity and pill burden are substantial factors. The polypill, a fixed-dose combination of common antihypertensives, aspirin, and a statin, was suggested in the paper as a tool to reduce nonadherence in high-risk populations (2). Taking a single pill daily rather than multiple pills improves compliance.

However, the pharmaceutical ingenuity of the polypill may not be enough to ensure compliance. We suggest that it may be worth it to consider directly observed therapy (DOT), a strategy of watching patients take their pill or pills daily in an ambulatory care setting, as a tool to reduce CVD-related morbidity and mortality. This method has had a resounding success for other disease epidemics such as tuberculosis (3). Several drugs with proven mortality-reducing benefits in secondary prevention for CVD such as aspirin, beta-blockers, statins, and angiotensin-converting enzyme inhibitors lend themselves to once-a-day doses and are, thus, amenable to DOT. Hameed et al. (4) implemented a DOT clinic in the ambulatory setting and obtained promising results with a resolution of 50% of previously classified resistant hypertension.

Given the epidemic of CVD and the numerous facets that interplay in nonadherence to the appropriate regimen, investing in the infrastructure for DOT in addition to the polypill strategy may lead to improved cardiovascular disease-related outcomes.

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REFERENCES

1. Ferdinand KC, Senatore FF, Clayton-Jeter H, Cryer DR, Lewin JC, Nasser SA, et al. Improving medication adherence in cardiometabolic disease: practical and regulatory implications. J Am Coll Cardiol 2017;69:437–51.

2. Lonn E, Bosch J, Teo KK, Pais P, Xavier D, Yusuf S. The polypill in the prevention of cardiovascular diseases: key concepts, current status, challenges, and future directions. Circulation 2010 Nov 16;122:2078–88.

3. Yin J, Yuan J, Hu Y, Wei X. Association between Directly Observed Therapy and Treatment Outcomes in Multidrug-Resistant Tuberculosis: A Systematic Review and Meta-Analysis. PLoS ONE 2016;11(3):e0150511.

4. Hameed MA, Tebbit L, Jacques N, Thomas M, Dasgupta I. Non-adherence to antihypertensive medication is very common among resistant hypertensives: results of a directly observed therapy clinic. J Hum Hypertens 2016 Feb;30:83–9.

REPLY: Directly Observed Therapy

A Possible Tool to Tackle Medication Nonadherence in the CVD Epidemic

We appreciate Drs. Mezue and Rangaswami's interest in our State-of-the-Art Review paper (1) and would like to respond by making the following 4 points. First, we agree there is good evidence of directly