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Comparison of insulin dose adjustments by primary care physicians and endocrinologists

Primary care physicians (PCPs) are reluctant to start/intensify insulin. Two possible reasons are lack of time or (perceived) and lack of ability. To test the latter, we developed 20 simulated cases based on patients' meter downloads and assigned the following insulin regimens: 3 basal insulin alone, 4 basal-bolus, 6 self-mixed-split, 5 premixed, 1 with U-500 regular insulin and 1 with delayed responses to NPH insulin. The insulin dose adjustments of 9 PCPs and 9 endocrinologists were compared to a Gold Standard (GS). The senior author has taught house staff, nurses, physician assistants and clinical pharmacists how to adjust insulin doses for 50 years. A registered nurse (not an NP) taught these principles and supervised by PCPs who referred patients to her lowered HbA1c levels of 111 taking insulin at referral from 11.0% to 7.3%. These computerized principles served as the GS against which the PCPs and endocrinologists were compared. In 162 instances where the GS did not make dose changes, the PCPs and endocrinologists also did not, 53% and 49% of the time, respectively. In 396 instances where the GS did make dose changes, both groups did 67% of the time. The mean unit difference from the GS was significantly ($P < 0.01$) less with PCPs (-1.2) than with endocrinologists (-5.1). In conclusion, the abilities of PCPs to adjust insulin doses are like endocrinologists suggesting that time constraints are a major barrier. Utilizing reports generated by these computerized insulin dose adjustment algorithms after meters are downloaded in the office or remotely will save PCPs time and face-to-face visits if done remotely. The latter telemedicine approach is economically feasible because of a CMS monthly fee of \$42.

Biography

Mayer B Davidson is a Professor of Medicine at Charles R Drew University and the David Geffen School of Medicine at UCLA. He has been caring for diabetic patients for 50 years. He was the Past President of the American Diabetes Association (1997-1998) and the Editor-in-Chief of Diabetes Care (2002-2006). He has received the Outstanding Physician-Clinician in Diabetes Award from the American Diabetes in June 2016. He is also the Chief Medical Officer of Insulin Algorithms Inc.

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