1.9±2.12 joints in the placebo group (P<.005) over a 6-month period.4

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What common problems affect the accuracy of long-term glucose monitoring?

Evidence-Based Answer

Red blood cell (RBC) survival varies enough in diabetic patients to affect the glycosylated hemoglobin (HbA1c). Accuracy of home glucose monitoring can also vary dramatically, depending on the machine and technique used. The clinical value of monitoring glycated serum protein (fructosamine)—which reflects the mean glucose concentration over the prior month—rather than HbA1c is unknown. (SOR C, based on bench research and exploratory cohort studies of disease-oriented evidence.)

Recent bench research involving 6 diabetic patients and 6 normal controls suggests that differences in RBC life span are sufficient enough to alter HbA1c. The mean age of circulating RBCs ranged from 39 to 56 days in diabetic patients and 38 to 60 days in nondiabetic controls. This study concluded that RBC life span varied enough to alter the HbA1c.1

A study of 108 diabetic patients enrolled at 2 family practice residency sites that practiced self-monitoring of blood glucose showed variability of patient-generated glucose measurements across the study population. Fifty-three percent of patient-generated glucose measurements were within 10% of the control value (measured by a glucose monitor calibrated twice daily), 84% were within 20% of the control value, and 16% of patients varied 20% or more from the control value.2

A prospective cohort study compared HbA1c and fructosamine values to self-monitored blood glucose results in 25 patients with diagnosis of type 2 diabetes over a 16-week period. Comparing correlation coefficients between HbA1c, serum fructosamine, and mean capillary blood glucose, serum fructosamine better reflected average blood glucose concentrations over weeks 3 to 6, while HbA1c better reflected serum levels over weeks 8 to 10. However, HbA1c measurement correlated more closely with home capillary blood glucose levels overall.3

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What is the best way to evaluate vertigo presenting in primary care?

Evidence-Based Answer

A thorough history and a physical examination that includes a Dix-Hallpike maneuver is likely sufficient to evaluate most patients with uncomplicated vertigo in the office setting. Further workup using laboratory testing or neuroimaging is indicated only when the etiology is unclear or the primary evaluation suggests an etiology outside the middle ear. (SOR B, based on cohort studies.)

Key features in the history of a dizzy patient, such as nature of onset, duration of symptoms, presence of hearing loss or tinnitus, and abnormal neurologic findings, can help distinguish the different types of vertigo.

A 2002 prospective study of 70 patients presenting in primary care with symptoms of vertigo found that 93% had benign paroxysmal positional vertigo (BPPV) (n=30), vestibular neuronitis (n=28), or Ménière’s disease (n=7). The performance of the Dix-Hallpike maneuver had a positive predictive value of 83.3% and a negative predictive value of 52% for the diagnosis of BPPV. In contrast, performing the maneuver on non-BPPV patients had a positive predictive value of only 16%.4

In a 1999 review of 38 studies, 12 studies with 4,538 patients focused on the etiology of dizziness.