



Dialysis Patients and Glucose Monitors

Patients who receive EXTRANEAL peritoneal dialysis solution are at risk for having their blood sugar levels misinterpreted as elevated. The active ingredient in EXTRANEAL is metabolized to maltose. This is a sugar that may be falsely read as glucose by some portable glucose monitors. This can also occur in patients who are receiving maltose containing intravenous immunoglobulin.

The problem is really due to the test strips used. When the test strips have enzymes such as GDH-PQQ or GDO, monitors can't distinguish among glucose, maltose or other sugars. Commonly used point of care glucose monitors such as Accu-Chek (Roche), FreeStyle(Abbott) and Ascensia (Bayer) have been associated with this problem. This is not a complete list. Various manufacturers use the GDH-PQQ technology and have multiple test strips approved for use with their monitors. Some product lines include test strips that use more than one type of enzyme methodology.

Patients have been treated inappropriately because of the spurious hyperglycemic reading in post-anesthesia care units, ICUs, general hospital units, and one case in which paramedics were evaluating and treating a patient at home. Apparently, the patient at home was unable to communicate, was diabetic and on dialysis. She was given her insulin. There have been deaths associated this problem. One death was described as due to "severe hypoxia due to untreated hyperglycemia."

The Institute for Safe Medication Practices recommends education to increase the awareness of this so-called device drug interaction. Portable blood glucose monitors should use systems that rely on the following enzymes: glucose oxidase, glucose hexokinase, GDH-NAD or FAD-GDH, which are accurate in the presence of interfering substances.

Contact your vendor and local medical control to deal with this issue.