Article in Press

Assessment of xylitol serum levels during the course of parenteral nutrition including xylitol in intensive care patients: A case control study

Andrea S. Schneider, Anika Schettler, Andrea Markowski, Birgit Luettig, Michael Momma, Claudia Seipt, Johannes Hadem, Michaela Wilhelmi

Received 11 April 2013; accepted 29 June 2013. published online 11 July 2013.
Uncorrected Proof

Summary

Background & aims

Xylitol has been approved for parenteral nutrition and may be beneficial in catabolic situations. The aim was to establish an easy method to monitor xylitol serum levels in patients receiving xylitol and to determine whether xylitol is safe.

Methods

A commercially available xylitol test was validated and used to measure serum levels in 55 patients admitted to our intensive care unit with an indication for parenteral nutrition with xylitol for at least 24 h. Controls consisted of the most recent 56 patients admitted to the intensive care unit who received parenteral nutrition without xylitol for at least 2 days. Xylitol serum levels were determined using the test. Adverse events, liver enzymes, lactate, bilirubin, γ-glutamyl transpeptidase, and insulin requirement were secondary endpoints.

Results

Patients receiving xylitol received 32.6% less insulin than controls. The amount of energy they received was comparable (xylitol: 810.1; controls: 789.8 kcal). Mean liver enzymes and lactate levels were similar in both groups. Adverse events considered attributable to xylitol did not occur. Xylitol did not accumulate in patients' blood and returned to near baseline values one day after parenteral nutrition was stopped.

Conclusions

Parenteral nutrition with xylitol appears to be safe for critical care patients. There were no signs of hepatoxicity.

Trial registration DRKS: DRKS00004238**.**