

New cause of critical illness hypoglycemia identified

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The endocrinologic basis of pediatric critical illness hyperglycemia (CIH) differs depending on the disease processes. Researchers writing in BioMed Central's open access journal *Critical Care* describe how both peripheral insulin resistance and primary beta-cell dysfunction can cause CIH in children.

Catherine Preissig and Mark Rigby from the Emory University School of Medicine, Atlanta, USA, studied 41 children receiving intensive care treatment. They found that those with respiratory failure only had CIH caused by elevated insulin resistance, while those with both respiratory and cardiovascular failure had CIH caused by primary beta-cell dysfunction. Preissig said, "Understanding the etiology of CIH may significantly impact disease course and therapeutic approach. Further studies must confirm whether insulin treatment is effective in both subgroups of patients".

CIH is highly prevalent in pediatric critical illness; the authors estimate that approximately 20% of admissions to their ICU develop the condition. They found that as well as the etiological differences described above, patients with respiratory failure and cardiovascular failure also had more severe CIH than those with respiratory failure alone. Preissig concludes, "Understanding these differences and elucidating the pathogenesis of CIH may assist in developing individualized glycemic goals and treatment strategies in children with life-threatening illness or injury".

More information: Hyperglycemia results from beta-cell dysfunction in critically ill children with respiratory and cardiovascular failure: a prospective observational study, Catherine M Preissig and Mark R Rigby *Critical Care* (in press), ccforum.com/

Source: BioMed Central

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