
New-onset Diabetes After Acute and Critical Illness



The degree of in-hospital hyperglycaemia in acute and critically ill patients increases susceptibility to new-onset diabetes after hospitalisation, according to a systematic review published in the journal Mayo Clinic Proceedings.

"We found a stepwise increase in the prevalence of new-onset diabetes, with 28 percent of patients with severe hyperglycaemia developing new-onset diabetes after hospital discharge. This is strikingly higher than the 8.5 percent global prevalence of diabetes in adults," write authors of the study.

Transient elevations in blood glucose concentration are commonly observed during acute and critical illness. This response in patients without a known history of diabetes was classically considered benign and commonly referred to as stress hyperglycaemia. Recent studies have investigated the risk of developing diabetes after acute and critical illness, but the relationship between degree of in-hospital hyperglycaemia and new-onset diabetes remains largely unknown.

This study examined the evidence for the relationship between in-hospital hyperglycaemia and prevalence of new-onset diabetes after acute and critical illness. Twenty-three studies were included in the systematic review, and 18 of these (111,078 patients) met the eligibility criteria for the meta-analysis. Patients with no history of diabetes before hospital discharge were included in the systematic review. In-hospital glucose concentration was classified as normoglycaemia, mild hyperglycaemia, or severe hyperglycaemia for the meta-analysis.

Researchers found that the prevalence of new-onset diabetes was significantly related to in-hospital glucose concentration and was 4 percent, 12 percent, and 28 percent for patients with normoglycaemia, mild hyperglycaemia, and severe hyperglycaemia, respectively. The prevalence of new-onset diabetes was not influenced by disease setting, follow-up duration, or study design.

"The findings of the present study suggest that in-hospital hyperglycaemia is not benign and raises the question as to whether this represents an unrecognised subtype of diabetes or a new risk factor for type 2 diabetes mellitus," the authors point out. "Prospective observational studies are now warranted to determine whether acute and critical illness is a causative factor for the development of new-onset diabetes."

Source: [Mayo Clinic Proceedings](#)

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