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PHYSICIAN CONNECT

Dear Doctor,

Greetings from Micro Labs. We are happy to bring you "Physician Connect" which contains latest and interesting news.

This issue contains:

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The glycemic index and the prognosis of diabetic individuals with acute coronary syndrome

Background:

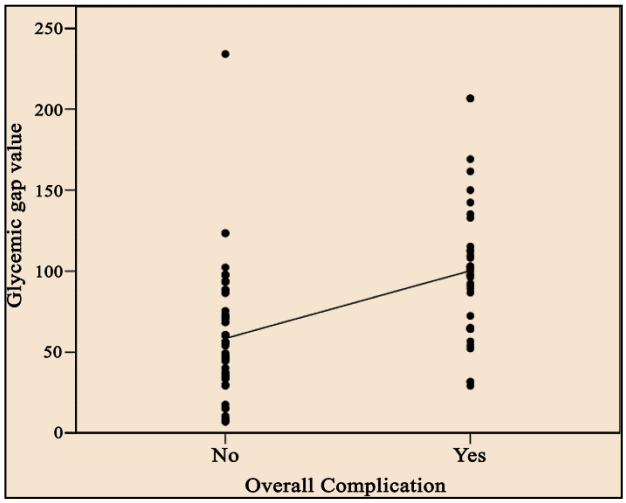
Diabetic nephropathy is a significant independent risk factor for coronary artery disease. Hyperglycemia at admission is prevalent in patients with acute coronary syndrome (ACS) and is a risk factor for in-hospital death and sequelae, according to studies. Hyperglycemia is a better predictor of adverse outcomes in ACS patients who have never had diabetes than in those who have. Despite the fact that there is a definite link between hyperglycemia and the onset and progression of cardiovascular disease, the significance and management of hyperglycemia in ACS patients is unclear.[1] Stress-induced hyperglycemia (SIH) is the body's immediate reaction to a variety of serious conditions, including acute coronary syndromes. Elevated hyperglycemia has long been linked to an increased risk of in-hospital and long-term death in ACS patients. [2] Stress hyperglycemia shares many characteristics with type 2 diabetes hyperglycemia, such as increased oxidative stress, inflammation, and stress-responsive kinase activation. Hyperglycemia's predictive function in diabetic patients with ACS is still debated, at least in the short term. The researchers wanted to see if there was a link between glycemic gap and clinical outcome in diabetic patients with ACS.[3]

Methodology:

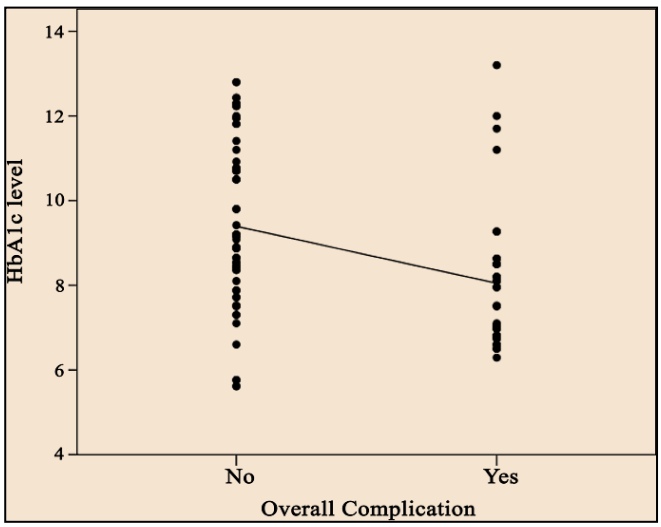
A total of 113 diabetic patients aged 40 to 81 years were recruited for this study. All patients had blood drawn for investigation of blood gases and cardiac biomarkers of ischemia, such as CK-MB and high sensitivity Troponin. The proportion of glycated haemoglobin (HbA1c) was calculated. Within 10 minutes of presentation, all patients received a 12-lead ECG and a chest radiograph to rule out ACS mimics such as aortic dissection, pneumothorax, and pneumonia. The glycemic gap was computed by subtracting the glucose level obtained at the emergency department (ED) from the A1c-Derived Average glucose (ADAG) level, which reveals variations in blood glucose levels during the acute incident. The glycemic gap was linked to the patient's outcome, which was determined by the issues that arose during the patient's stay and the length of that stay.

Results:

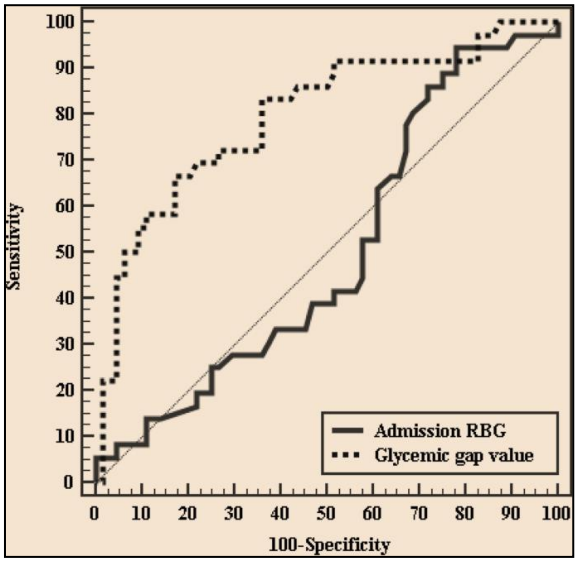
This study involved 100 diabetic patients who presented to the emergency room with ACS. During their hospital stay, 36 patients experienced a major adverse cardiac event (MACE), with 6 experiencing cardiac arrest, 24 experiencing pulmonary edema, and 13 experiencing life-threatening dysrhythmias; it should be noted that some patients experienced more than one problem. Diabetic patients who had MACE had a substantially bigger glycemic gap (p 0.001) than diabetic patients who did not have MACE, however there was no significant difference between the two groups in terms of admission



random blood glucose (RBG), with p = 0.879. In diabetic patients with ACS, there was a substantial positive link between the glycemic gap value and the occurrence of MACE, and a significant negative correlation between HbA1c level and the occurrence of MACE



Correlation between MACE occurrence and HbA1c level (*n* = 100)



ROC curve for admission RBG and glycemic gap value to predict MACE

The primary finding of this prospective study was that in diabetic patients who reported to the ED with ACS, the glycemic gap is strongly and significantly associated to the occurrence of MACE (p value 0.001) and prolonged hospital stay length (p value 0.001).[3] The use of the glycemic gap in diabetic patients as a predictor of bad outcome in a variety of situations has

been questioned, including ICU outcomes, community-acquired pneumonia, necrotizing fasciitis, acute heart failure, and acute coronary syndrome. They all linked the glycemic gap to worse outcomes and thus longer hospital stays, but none of them determined the glycemic gap cut-off value. 4 HbA1c measured levels were shown to be negatively related to MACE occurrence and long hospital stay in the current investigation, with a statistically significant relationship.[3]

In diabetic individuals with ACS, the glycemic gap is a better indication than admission blood glucose alone. This study determined the best cut-off value for this critical biomarker.

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Changes in Respiratory Instability After Transcatheter Aortic Valve Replacement: Clinical Implications

Background:

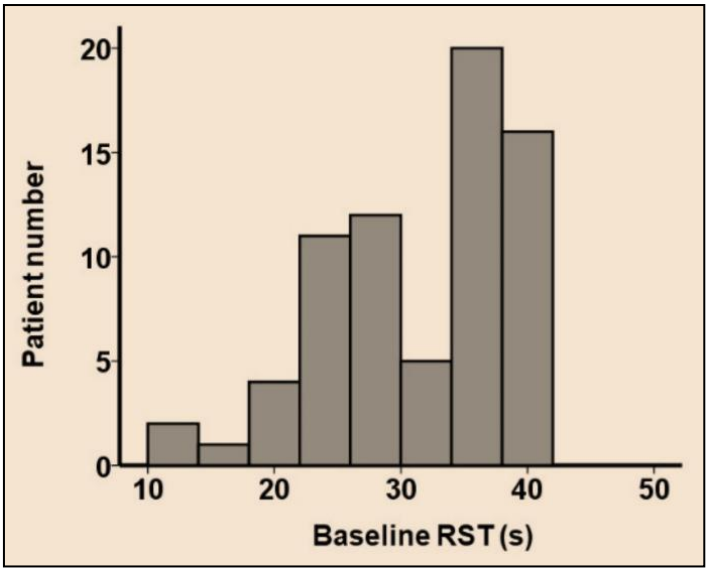
Aortic stenosis (AS) has become a common public health issue. Transcatheter aortic valve implantation (TAVI) has revolutionised AS care and is currently being evaluated for use in patients with a minimal surgical risk.[1] Transcatheter aortic valve replacement (TAVR) is a well-established procedure for patients with severe aortic stenosis who are at high surgical risk.[2] For individuals with severe AS, TAVR has been shown to be an effective treatment. Patients with this condition have a high-to-intermediate surgical risk. New randomised trials have recently expanded the clinical indications for the operation, demonstrating its efficacy in intermediate and low-risk patients.[3] Because of their lower cardiac output, increased sympathetic nerve activity, and sleep-disordered breathing, patients with AS may also develop respiratory instability. Because of the improved hemodynamics, respiratory instability may improve after TAVR. The goal of this study was to look into changes in respiratory stability time (RST) after TAVR as a primary issue and their prognostic significance as a secondary concern.[4]

Methodology:

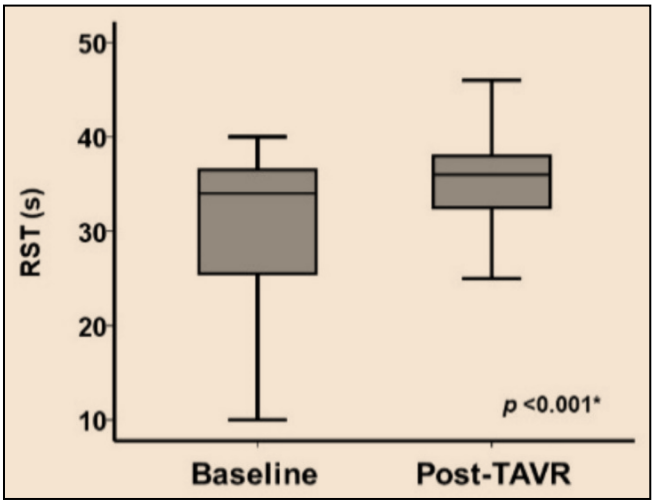
Between April 2017 and May 2020, patients who underwent RST measurements two days before TAVR and one week after TAVR were prospectively included. Under general or local anaesthesia, all patients got balloon-expandable or self-expandable valves. As baseline features, demographic, laboratory, hemodynamic, and echocardiographic data were gathered within one week prior to TAVR, as well as TAVR procedure data. Just before to the index discharge, post-TAVR laboratory and echocardiographic data were also acquired. During the 1-year follow-up period after the initial discharge, heart failure readmissions requiring IV diuretics were also counted.

Results:

Seventy-one individuals (median age 86; 35% men) were enrolled in the study. The baseline RST was linked to the degree of heart failure, which included higher plasma B-type natriuretic peptide levels ($p< 0.05$ for all). Following TAVR, RST improved significantly from 34 (26, 37) s to 36 (33, 38) s ($p< 0.001$). Lower RST (<33 s, $n = 18$) after TAVR was linked to a greater 2-year cumulative incidence of heart failure readmission (21% vs. 8%, $p = 0.039$), with a hazard ratio of 5.47 (95 percent confidence interval 0.90–33.2).



Distribution of baseline RST



Change in RST following TAVR. * $p < 0.05$ using the Wilcoxon signed-rank test

The researchers looked into how RST changed after TAVR and how it affected prognosis. The following are the key findings: (1) Lower RST suggested baseline respiratory instability, which was related with more advanced heart failure in patients with severe AS; (2) RST rose considerably following TAVR in the entire group; (3) RST 33 s was connected with the incidence of heart failure hospitalizations.[4]According to the Mack MJ et al trial, the rate of death, stroke, or re-hospitalization among patients with severe aortic stenosis who were at minimal surgical risk was considerably lower with TAVR than with surgery at one year.[5]

Following TAVR, overall respiratory instability improved. Following TAVR, persistent respiratory instability, as indicated by a low RST, was linked to the development of heart failure.

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Rectus Abdominis Abscess Misdiagnosis Due to Delayed Contrast Enhanced Computed Tomography

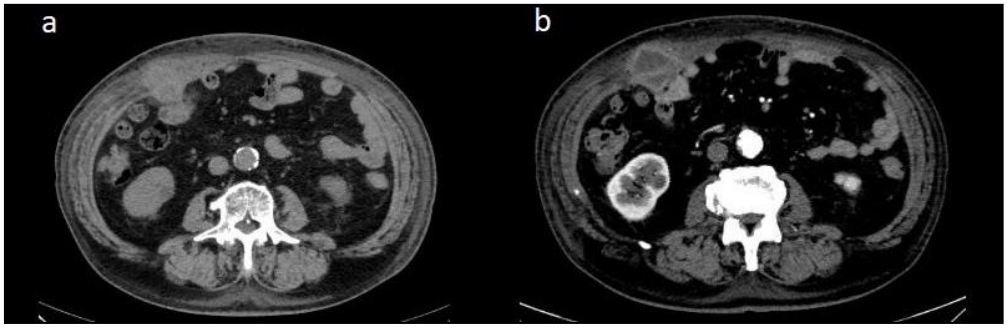
Background:

The rectus abdominis muscle flap is a workhouse flap that can be utilised in pelvic reconstruction to provide a significant volume of soft tissue coverage for interposition and tissue defects following fistula repair, APR, and pelvic exenteration.[1]Primary rectus abdominis abscess is a rather uncommon illness that necessitates the use of antimicrobials and drainage. Because the two disorders have very similar contributing factors, symptoms, and indicators, this ailment is readily mistaken as the more common primary rectus abdominis haematoma. The case of a primary rectus abdominis abscess that was initially misdiagnosed as a primary rectus abdominis haematoma is presented in this article.[2]

Case Presentation:

A 77-year-old man with a painful tumour on his right abdomen wall presented to the hospital. The pain began 10 days before to the appointment, and the lump appeared 6 days after he first felt it. The patient denied any physical exertion or trauma, but did recollect that the pain began after straining in the toilet. After coronary artery bypass grafting and aortic valve replacement, he was on warfarin and clopidogrel for coronary artery disease. He also had high blood pressure and diabetes. He was afebrile when examined. In the right lower abdomen, a warm, sensitive lump was discovered. A 40 mm tumour in the right rectus abdominis muscle was discovered on an abdominal plain computed tomography (CT) scan. He was admitted with a main rectus abdominis haematoma diagnosis. To determine the internal features of the lump, ultrasonography was used, which revealed an irregular hypoechoic mass in the rectusabdominis muscle. The patient was eventually identified with a primary rectus abdominis abscess and

given intravenous meropenem for 14 days, followed by 14 days of oral levofloxacin. After treatment, the abscess vanished.



(a) Non-contrast CT of the abdomen performed on day of admission showed a 40 mm mass lesion in the right rectus abdominis muscle. (b) Abdominal contrast-enhanced CT on day two revealed an abscess

In patients with a suspected primary rectus abdominis haematoma, it's critical to rule out a primary rectus abdominis abscess. Old age, hypertension, and the use of anticoagulant and antiplatelet medicines were all risk factors for primary rectus abdominis haematoma in our patient. However, certain findings were contradictory, such as the kind of onset (subacute rather than abrupt or acute) and an increase in C-reactive protein. Primary rectus abdominis abscess should be examined in male patients with diabetes and increased C-reactive protein levels, as previously documented. Abdominal ultrasonography and contrast-enhanced CT are acceptable modalities for additional examination in individuals suspected of having a primary rectus abdominis abscess. Contrast-enhanced CT is indicated since the quality and interpretation of ultrasonography are operator-dependent. Diffuse oedema with cellulitis, fluid buildup, and gas-fluid levels are all common CT findings in primary rectus abdominis abscesses. Contrast should be used while performing CT of abdominal wall mass lesions to differentiate primary rectus abdominis abscess from primary rectus abdominis haematoma, as it was discovered in this case.[2,3]

Finally, clinicians should evaluate primary rectus abdominis abscess in patients with primary rectus abdominis haematoma, particularly in men with diabetes and increased C-reactive protein levels. To accurately distinguish primary rectus abdominis abscess from primary rectus abdominis haematoma, contrast should be used when undergoing CT.

Reference:

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