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Immediate Preoperative Blood Glucose and Hemoglobin A1c Levels are not Predictive of Post-Operative Infections in Diabetic Men Undergoing Penile Prosthesis Placement

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Introduction: Recent reports have suggested that pre-operative diabetic control may be predictive of infection rates following penile prosthesis (PP) implantation.

Objective: In this study, we sought to investigate whether immediate pre-operative serum blood glucose (PBG) levels were associated with PP infection rates in diabetic patients.

Methods: We conducted a retrospective review of 923 diabetic patients undergoing primary PP (inflatable and malleable) implantation from April 2003 to August 2018 across 18 institutions. PBG levels (within 6 hours of surgery) and Hemoglobin A1c (HbA1c) levels were recorded for each patient, along with clinical and demographic variables. Patients had a median follow up time of 7 months (range 0-157). The primary outcome was rates of post-operative infection and secondary outcomes were revision and explantation rates. Patients were included in the analysis only if they had complete information regarding pre-operative glucose levels and outcomes. The impact of pre-operative glucose and HbA1c on post-operative infection, revision, and explantation rates was assessed using univariate analyses. The effects of age, diabetes-related complications, Charlson Comorbidity Index (CCI), surgical approach, and race were controlled for on multivariate analysis for rates of infection, revision and explantation.

Results: Overall 885 patients had complete records and were included in this study. Median age was 61 years (range 32-86). Median and mean pre-operative glucose levels were 136 mg/dL (range 54-344) and 144.7 mg/dL ± 45.8, respectively, and median and mean pre-operative HbA1c levels were 7.1 % (range 4.8-16.3) and 7.5% ± 1.5, respectively. Most PP were inflatable (98.9%). Devices used were AMS (47.6%) and Coloplast (52.4%). Surgical approach used was penoscrotal in 70.3%, subcoronal in 17.9%, and infrapubic in 11.8%. Post-operative infection, revision, and explantation rates were 3.7%, 7.5%, and 4.1%, respectively. There was no association between PBG levels or HbA1c levels and post-operative infection rates; p=0.134 and p=0.609, respectively. Similarly, there were no associations between revision and explantation rates with PBG levels (p=0.074 and p=0.250, respectively), nor with HbA1c levels (p=0.076 and p=0.272, respectively). On multivariate analysis, a higher CCI and a history of diabetes-related complications were significant predictors of higher revision rates (p=0.007 and p=0.028), respectively but were non-significant for infection or explantation rates.

Conclusions: In this largest ever multi-institutional cohort of diabetic men undergoing PP implantation to date, neither PBG nor HbA1c were predictive of device infection, revision, or explantation.