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Quality improvement study to decrease complications associated with the use of beta blocker with cocaine

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Introduction: Cocaine abuse causes various complications including hypertension (HTN), acute coronary syndrome, Myocardial infarction (MI), stroke, and even death. The use of β -Blockers (BB) can cause unopposed α -receptor stimulation, resulting in HTN and coronary vasospasm (CVS).

Methodology: 5123 patients who presented to our hospital between 2012-2016 and had Urine Drug Screen positive for Cocaine (UDS-C) were identified by retrospective chart review. Inclusion criteria, older than 18 years, UDS-C. The quality improvement study (QI) got institutional review board release. Cerebral-cardiovascular diseases (CCVD) were compared between the exposed and non-exposed group. MI was detected, either by the rise in troponin with and without ST-segment elevation (STEMI). Angina was detected by chest pain without troponin rise. HTN was detected by BP 180/120 or above. The cerebral complication was confined to non-traumatic brain bleed (NTBB). The use of BB in-home medication or in the hospital was reported. The Chi square test χ^2 was used for statistical analysis. For the analysis, $p \geq 0.05$ and modified standardized residuals >2 or -2 were regarded as statistically significant. The analysis was done by the medical resident using SPSS.

Results: The use of BB either at home (UBBH) or hospital was associated with increased risk of CCVD, HTN, angina, and NSTEMI. Labetalol was found to increase the risk of HTN. Carvedilol was found to be associated with increased risk of CCVD and HTN. UBBH was associated with CCVD, HTN, NSTEMI, STEMI and NTBB.

Discussion: The use of BB with cocaine increases risk of CCVD. Previous data showed safe profile with of labetalol; however, higher association with HTN is shown here.

QI intervention: Our study starting a power chart intervention that pop-up when the prescriber orders BB in a patient who had a UDS-C. Another study to be done to evaluate the effectiveness of the intervention in decreasing the above-mentioned complications.

Speaker Biography

Ahmed Elshazly MD has graduated from medical school during 2012. He then was a research fellow for 2 years at Albert Einstein College of Medicine, Mayo Clinic and West Virginia University. He is currently pursuing Internal Medicine residency at Atlantic Care Regional Hospital, Atlantic City, NJ.

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