Radiology in the Midst of the Opioid Epidemic: 12-year Analysis of Imaging Findings, Mortality and Opioid Prescription History among Patients with Intravenous Substance Use Disorders (IV-SUDs) Presenting to Emergency Radiology

Thursday 11:50-12:00 PM | SSQ06-09 | Room: S405AB

PURPOSE

To assess the prevalence and type of IV-SUDs imaging complications, mortality rate, and history of opioid prescriptions (OP) and in patients presenting to Emergency Radiology (ER).

METHOD AND MATERIALS

HIPAA compliant-IRB approved retrospective study of 1031 patients who presented to ER (2005 to 2016) to assess IV-SUDs complications. Demographics, clinical symptoms, imaging diagnosis, history of OP, and dates of death were recorded. Exams were categorized by imaging diagnosis, modality and specialty. Analyses for significant differences were done.

RESULTS

In 1031 patients (65% men; mean age 36 yrs; 78% white; 95% English speakers), 1673 exams (779 X-rays, 544 CT, 292 MRI and 58 US) were performed (1-13 exams per patient, mean 1), accounting for 0.2% (1673/854299) of all ER studies in the same period. 52% of patients had 1 or more studies with IV-SUDs complications. The rates of positive imaging per imaging specialty were: GI 77% (113/146), MSK 52% (419/802), Vascular 48% (77/162), Neuro 47% (97/206), and chest 25% (90/356). Most frequent clinical symptoms were local complications of injections (27%, 450/1673), respiratory (15%, 251/1673) and back pain (13.4%, 224/1673). History of OP before the first imaging was present in 30% (310/1031) of cases (mean 10 prescriptions per patient); significantly more often in women (37%, 128/348), than men (27%, 182/673, p=0.008). Mean time from OP to first imaging was 51 months (SD 39); significantly shorter in men (45 months) than women (51 months, p=0.01). Overall death was recorded in 11.7% (121/1031) of patients; significantly higher in patients with positive imaging diagnosis of IV-SUDs complications (14%, 73/534) than in those without (10%, 48/449, p=0.04). 5-yr mortality rates were: 7% (73/1031) overall; higher in patients with prior opioid prescription (9%, 29/310) than in those without (6%, 44/721, p=0.06); higher in patient with imaging complications (6%, 33/534) than in those without (4%, 21/427, p=0.2).

CONCLUSION

There is a high prevalence of multisystem IV-SUDs imaging complications among patients presenting to the ER. Patients with positive imaging findings and prior OP have a higher overall mortality rate compared to patients with negative imaging.

CLINICAL RELEVANCE/APPLICATION

Understanding factors associated with IV-SUDS imaging complications is fundamental to designing responsive patient care models that can better support the health and survival of this vulnerable population.