

## Retrospective analysis of changes in drug use patterns between 2012-2017 in patients presenting with neurosurgical problems

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**Abstracts will be considered for both poster and platform presentations**

### Other

Study Design: Retrospective series

Objective: Understand the changing dynamics of drug use in patients presenting to UK Hospital Neurosurgery service

Background: The impact of recreational drug use has been felt in Kentucky for the last decade; however, no efforts to quantify the effects on the field of neurosurgery have been made. Recently, drug use has been proposed as a major driver for the growing rate of spinal infections in Washington(1). With a rate of 1:20,000-100,000 for spinal infections(2) and a mortality of nearly 20% (3) this cluster of disease including spinal epidural abscess, discitis, and osteomyelitis, are formidable clinical entities. Although this research is ground breaking, it only shows a correlation between the rising rates for drug use and rising rates of spinal infection. It is necessary to delve deeper into a population of patients in order to see the full effect of drug use, the changes in drug use, and the impact it has at our own institution.

Methods: This is a case series study in which the Neurosurgery census at a tertiary care hospital is first meticulously combed for any patients with a history of drug use. These patients then have their data entered into RedCap. The de-identified data is then analyzed. Current data is given with averages and standard deviation. Where no averages or standard deviation can be calculated, the raw data is given. General parameters are collected and listed to insure patient populations are not drastically different.

Results: For this study 45 days of data from 2012 (45 patients) and 2017 (49 patients) were analyzed (total 90 days, 94 patients). Patient populations from 2012 to 2017 are listed in order and did not differ significantly in make up: Age 42(+/-14), 44(+/-16); Male 64%, 63%; White 91%, 100%. Notable findings include a decrease in patients using THC(19->11) and increases in methamphetamine(5->12), cocaine(2->4), Heroin(0->3), and Fentanyl(0->12). Not surprisingly, these changes were more pronounced on laboratory findings than on patient interview. Total deaths were 5 and 8 respectively, with the greatest burden placed on those who used drugs(2->5) compared to alcohol(2->1). Consults and the diseases seen were primarily related to trauma. However, two mycotic aneurysms were found in the 2017 series. Both patients had concurrent endocarditis. Spinal pathology not related to trauma included spinal infections. Notably there was one epidural abscess requiring drainage in both 2012 and 2017.

(1) Dr. Blecher et al. "Recent Increase in the Rate of Spinal Infections May be Related to Growing Substance-Use Disorder in the State of Washington: Wide Population-based Analysis of the Comprehensive Hospital Abstract Reporting System (CHARS) Database" Spine. 2018

(2) Dr. Chao et al. "Spinal Epidural Abscess: A Diagnostic Challenge" Am Fam Physician. 2002

(3) Dr. Schoenfeld et al. "Mortality, complication risk, and total charges after the treatment of epidural abscess" Spine. 2015