

**UC Davis**  
**Neurology**

**Title**

Imaging Characteristics of Methamphetamine-Associated Ischemic Strokes

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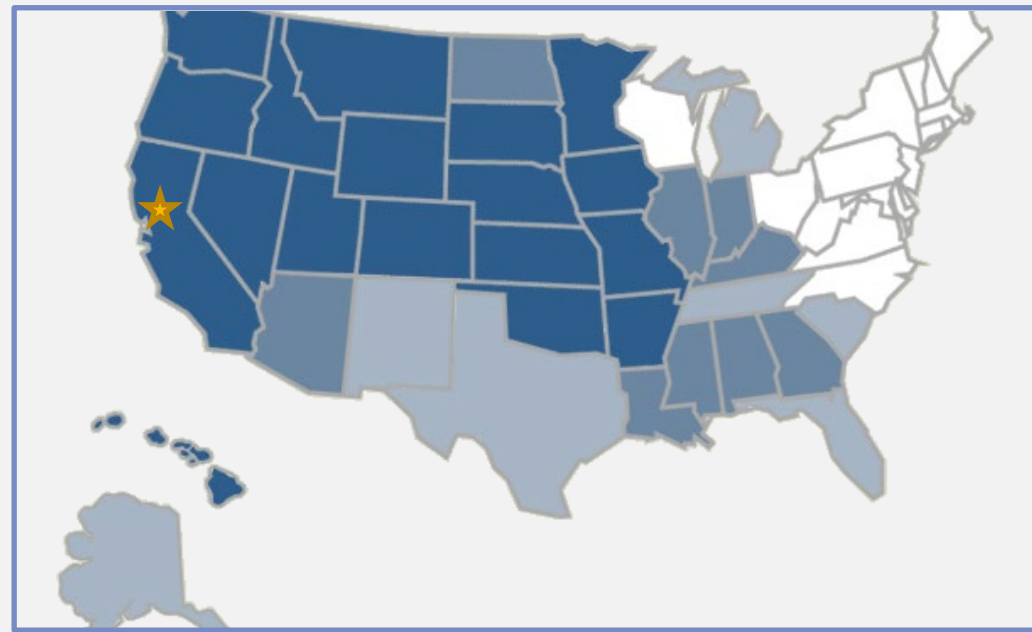
**Data Availability**

The data associated with this publication are not available for this reason: N/A

## INTRODUCTION

Methamphetamine (meth) is a highly addictive stimulant with harmful effects that lead to cardiovascular disease and stroke.<sup>1</sup> Rates of meth use have been growing with an estimated 24 million users worldwide as of 2015.<sup>2</sup> Despite a strong association between meth use and increased cerebrovascular risk,<sup>3</sup> detailed descriptions of clinical and neuroradiologic characteristics in larger cohorts are lacking.

Meth use in the United States<sup>4</sup>



Number of meth users in rehab per 100,000 state residents in 2003, the last year for which data is available for all 50 states.

Less than 5	5 to 15	16 to 50	51 or more
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## OBJECTIVE

To examine the clinical and neuroimaging characteristics in patients with acute ischemic stroke and concurrent methamphetamine use.

## MATERIALS & METHODS

- Single-center retrospective analysis
- Consecutive adults admitted in 2016 to 2019 for acute ischemic stroke and meth-positive toxicology

## RESULTS

### Patient Characteristics

- Total of 90 patients
- Nearly half from underrepresented minority ethnic/racial groups

Table 1. Demographics, N=90	n	%
<b>Age, average in years</b>	55	
<b>Sex</b>		
Male	62	69
Female	28	31
<b>Race/Ethnicity</b>		
White	42	47
Black/African American	22	24
Hispanic/Latino	7	8
American Indian/Native American	0	0
Asian	7	8
Pacific Islander	1	1
Other	11	12

### Lesion Characteristics

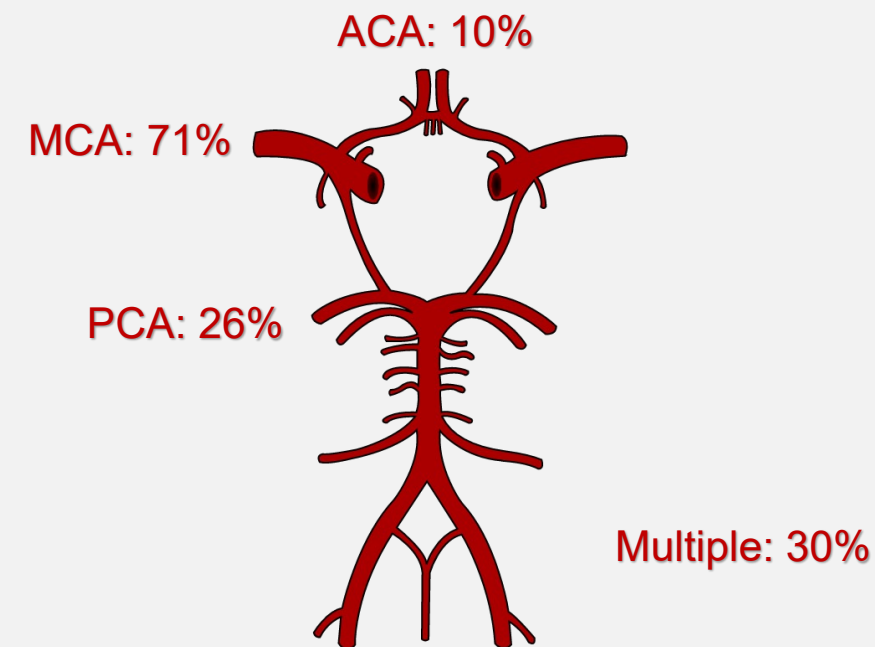


Figure 1. Affected vascular territories

Table 2. Acute ischemic strokes, N=90	n	%
More than one lesion	51	57
Bilateral	28	31
Purely cortical	6	7
Purely subcortical	28	31
Purely brainstem	4	4

### Patient Example

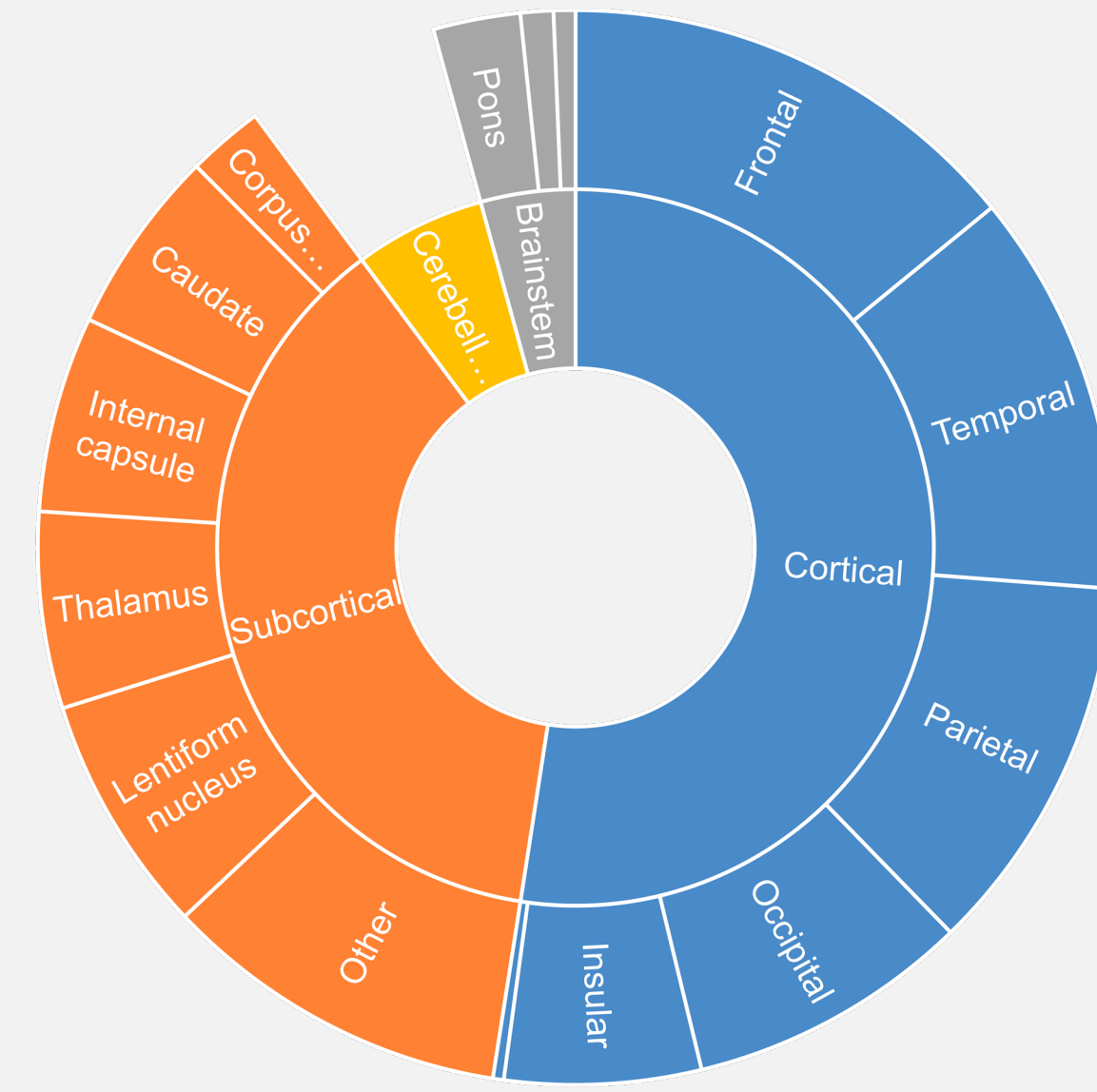
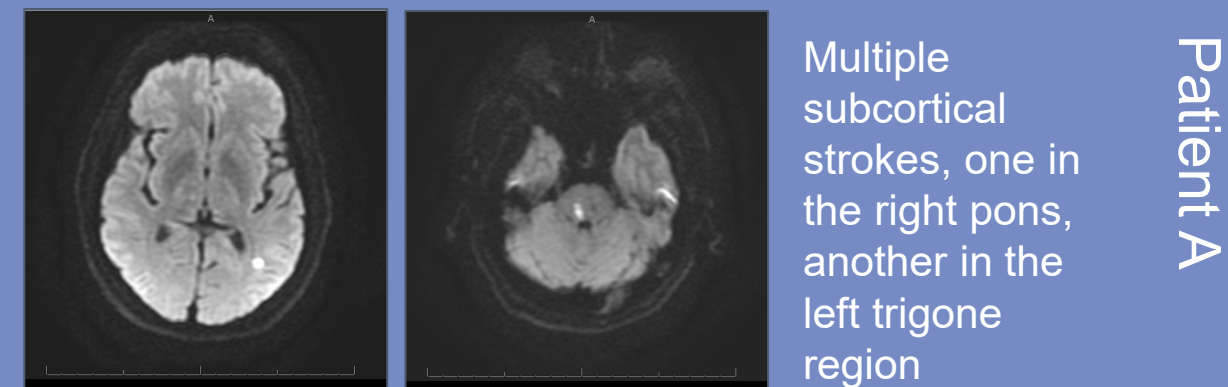


Figure 2. Distribution of lesions

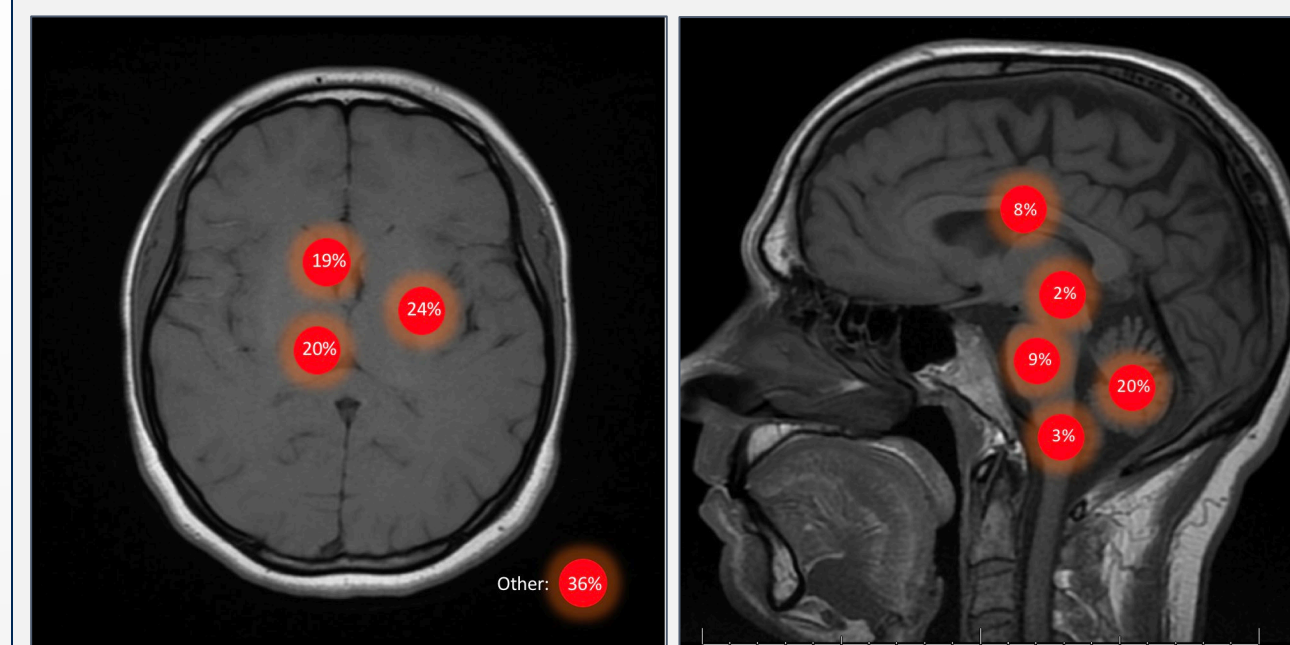


Figure 3. Subcortical lesion distribution

### Patient Discharge Dispositions

Table 3. Disposition, N=92*	n	%
Home	48	53
Rehab	8	9
SNF	12	13
Acute care/outside hospital	8	9
Death	14	15
Left against medical advice	2	2

\*Two patients were admitted twice for separate strokes

### Stroke Etiology

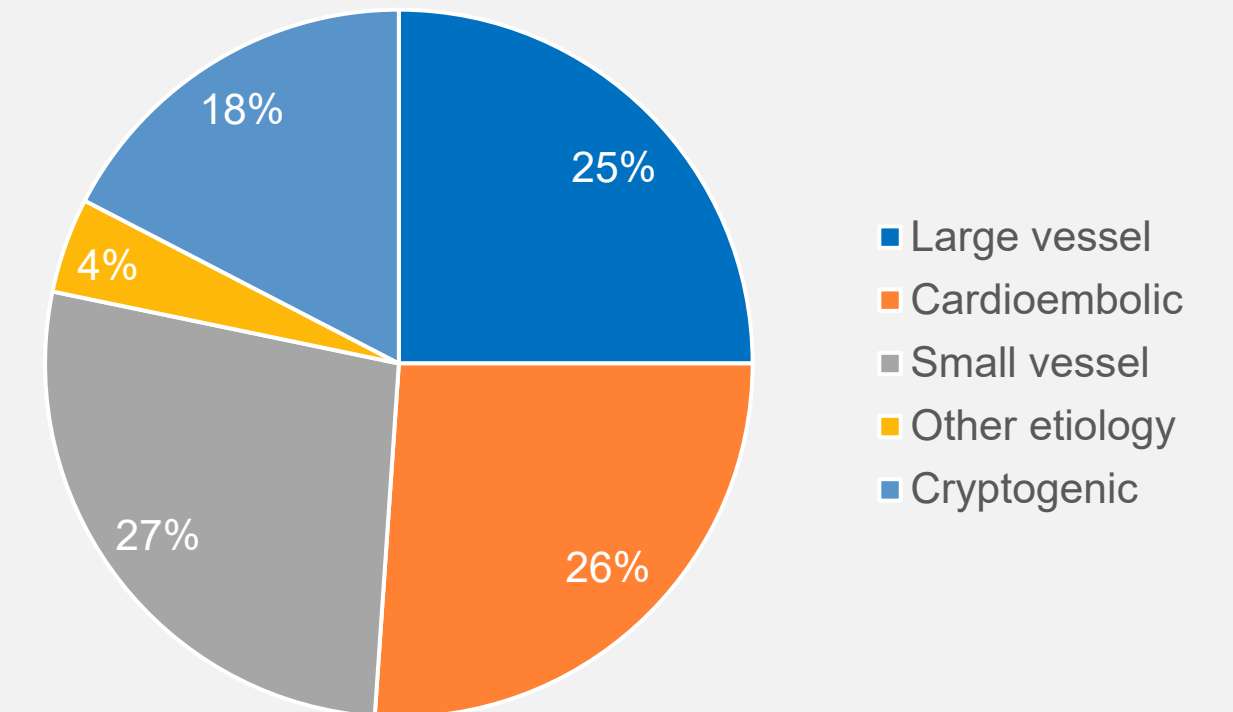


Figure 4. TOAST Criteria

## CONCLUSIONS

- Meth-associated acute ischemic stroke is a multicultural problem
- Although small vessel vasculopathy is suspected in most, a significant proportion is due to proximal embolic sources
- Clinical outcome was poor; long-term care required in most and nearly 1 in 6 died during their hospitalization
- Next steps of the study include comparing this sample with non-meth-associated ischemic strokes to identify significant differences in patient and imaging characteristics.

## REFERENCES

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4. PBS. (2006, February). Map: The Reach of Meth. Retrieved from <https://www.pbs.org/wgbh/pages/frontline/meth/map/>

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