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23RD ANNUAL SCIENTIFIC MEETING

Best Practices In Interventional Spine Care

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The Use of Moderate Sedation for the Secondary Prevention of Adverse Vasovagal Reactions

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Consultant & Expert Witness – State Farm (hourly fee)



SPINE SECTION

Original Research Article

The Use of Moderate Sedation for the Secondary Prevention of Adverse Vasovagal Reactions

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Background

- Vasovagal common
- Prevalence - 0-8.7%^{1,2}
- Higher rates in:
 - males
 - under the age of 65
 - with higher pre-procedural pain scores
- Can result in early procedural termination up to 30%



Methods

- **6,364 consecutive** fluoro guided spine injections
 - 3,529 consecutive patients
 - Cervical, Lumbar and Thoracic Segments
 - TFESI, MBB, IA Facet, Discal, SIJ, RF, Caudal, ILESI
- Multiple physicians in Single academic Medical center



Methods

- All patients monitored with pulse ox, nurse, intermittent BP
- Positive VV Defined: decrement in HR and BP, with one or more symptoms of VV: lightheadedness, dizziness, palpitations, nausea, feeling warm, excessive diaphoresis
- Rigorous Immediate data entry into EMR with drop down menus
- **Retrospective Analysis**

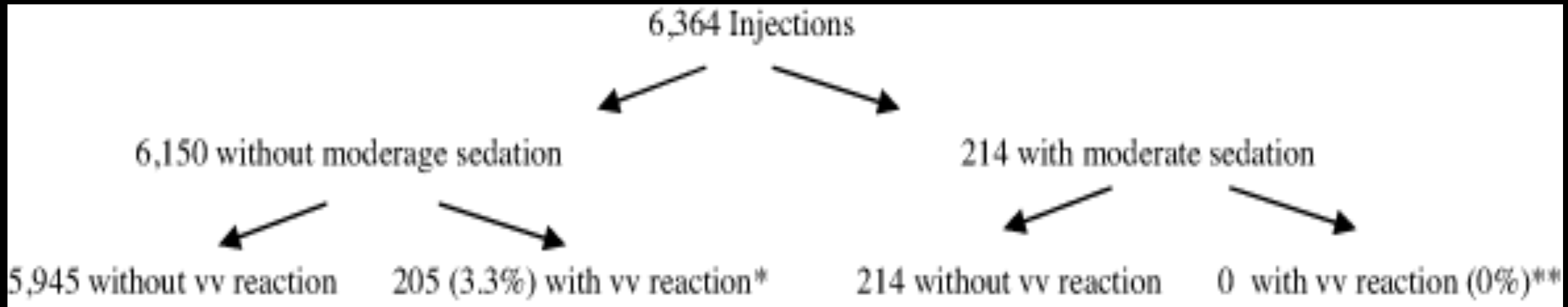


Sedation

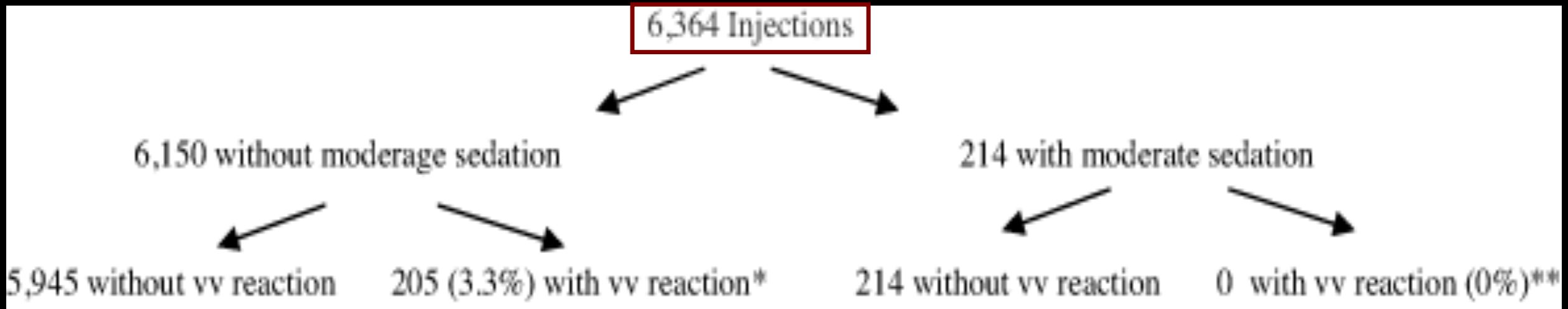
- At discretion of treating physician or request of patient
 - Patient Anxiety
 - History of VV
- Typical Sedation
 - 1-4 mg midazolam
 - 25-100 mg IV fentanyl



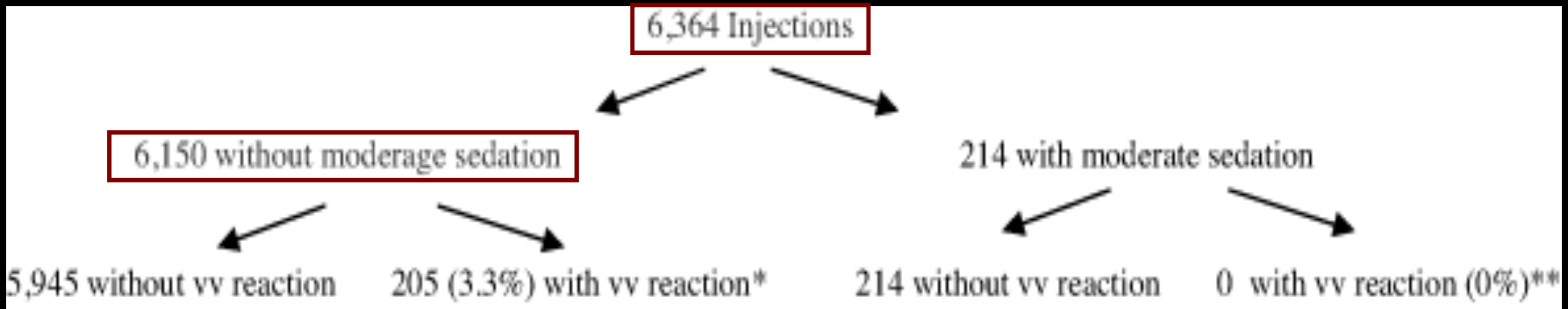
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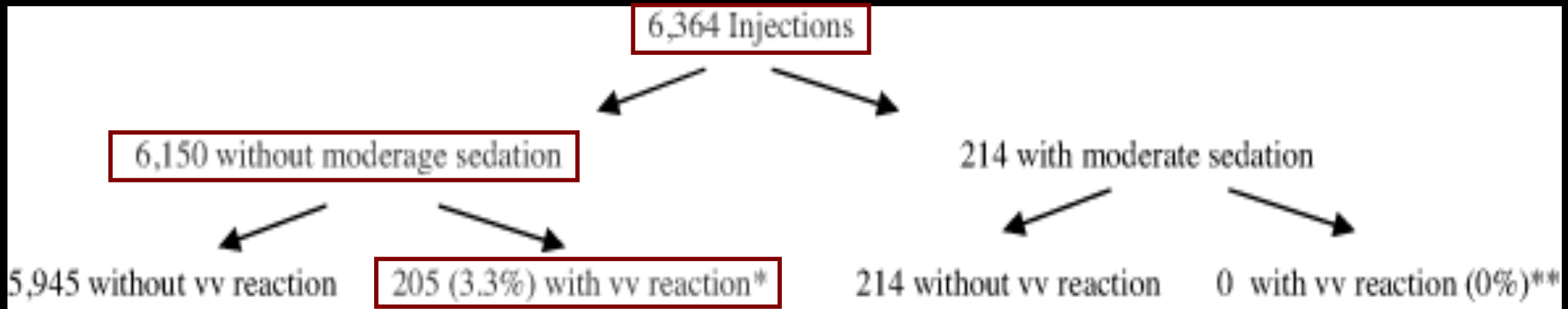
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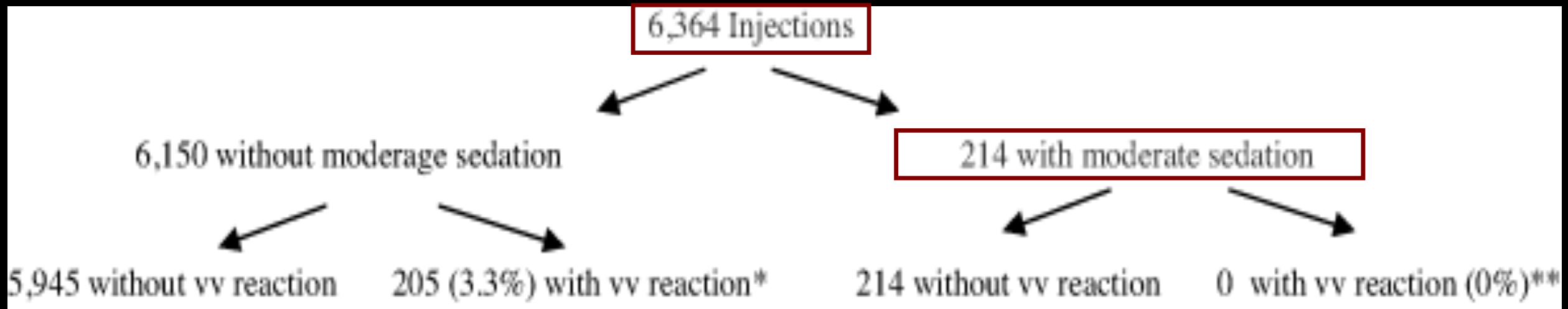
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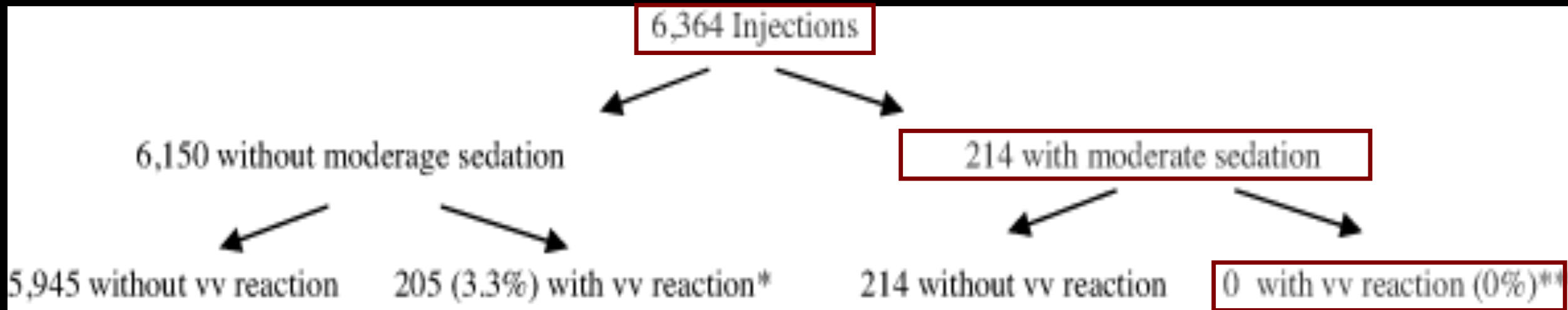
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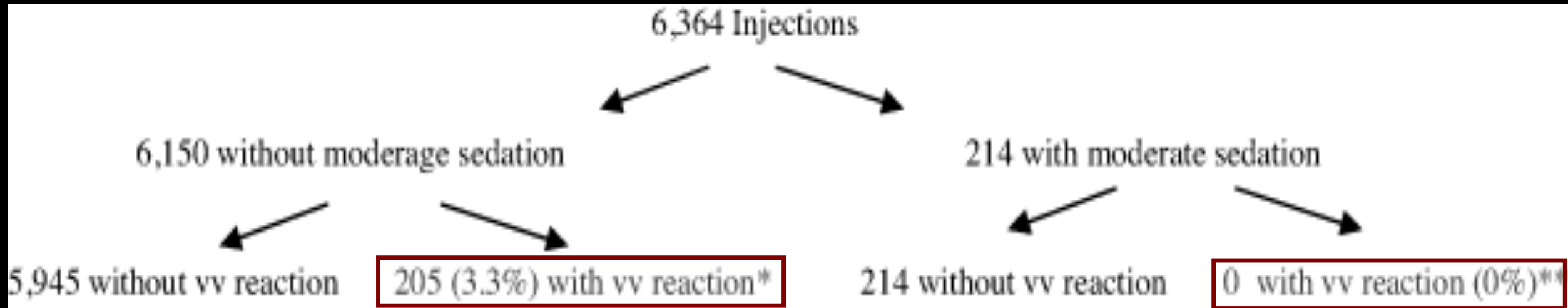
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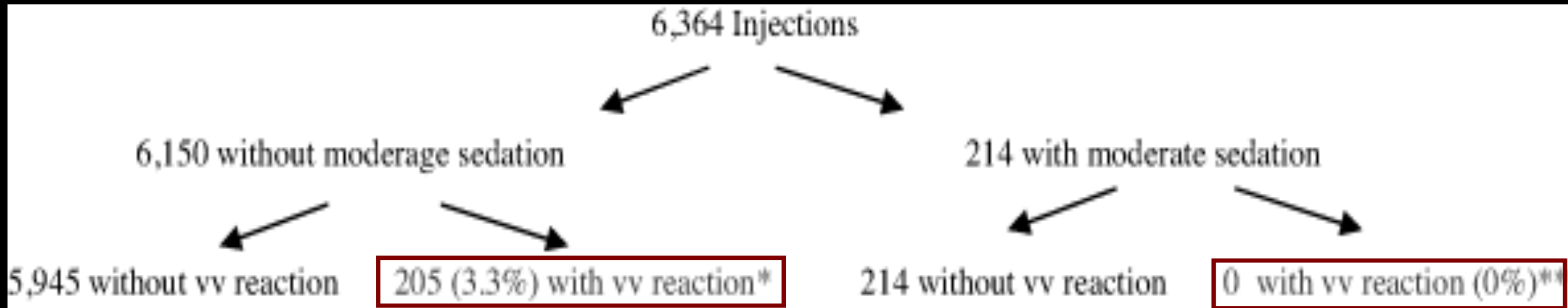
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95% CI= 2.9-3.8%

95% CI 0-1.8%

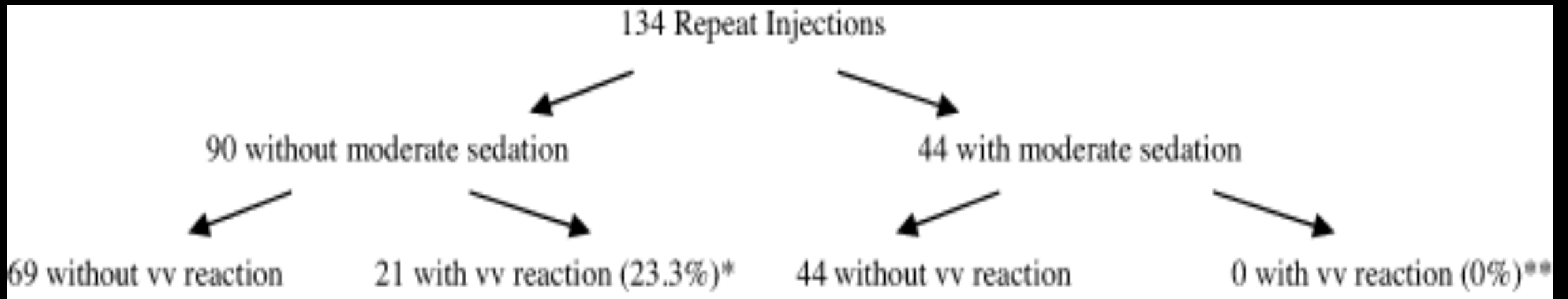


All Truth in a 2x2 Table – *Overall Cohort*

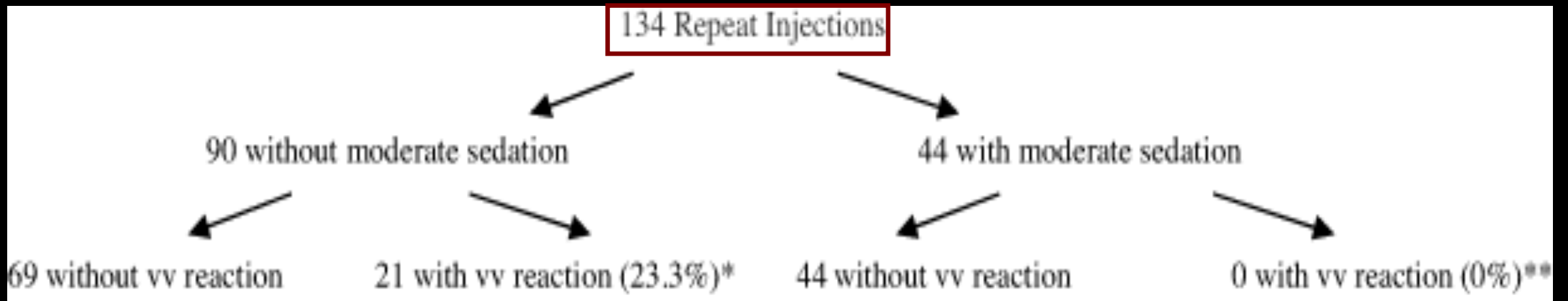
	VV	No VV	Total
No Sedation	184	5876	6060
Sedation	0	170	170
Total	184	6046	6230
$\chi^2 = 5.32$ ($P < 0.02$)			



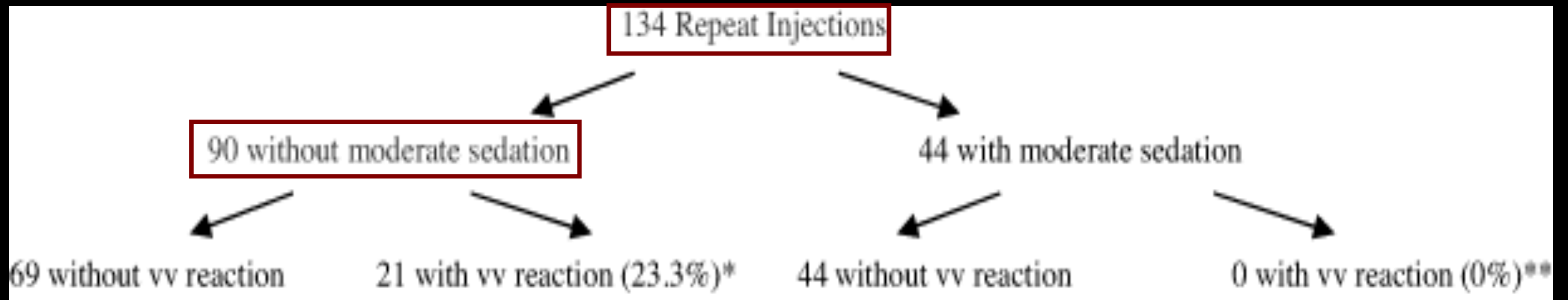
EFFECTS IN HIGHER RISK POPULATION



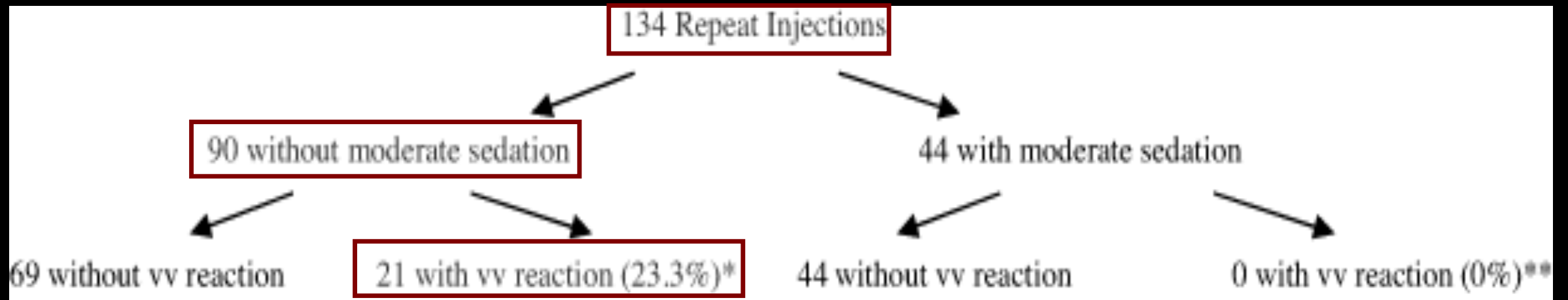
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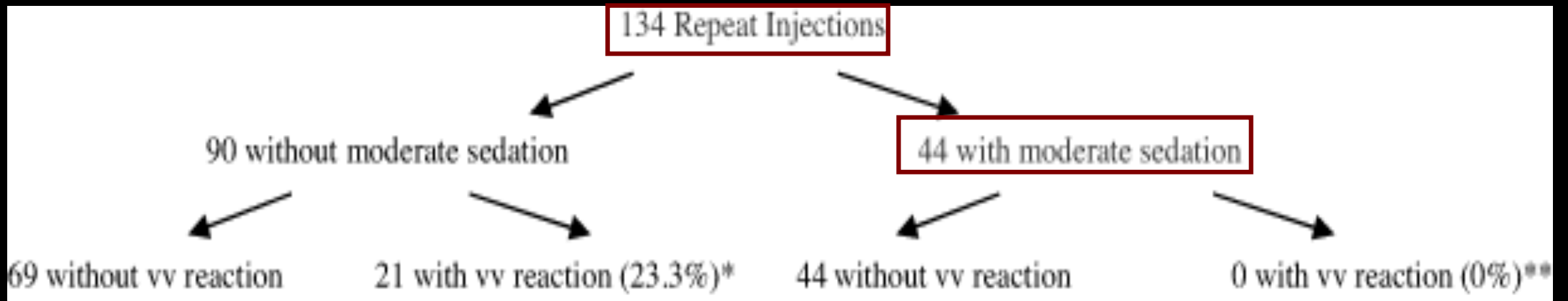
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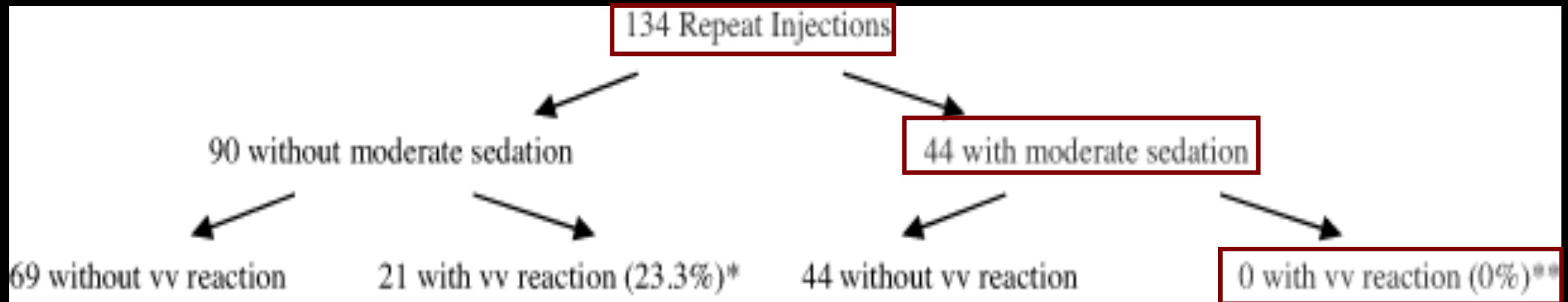
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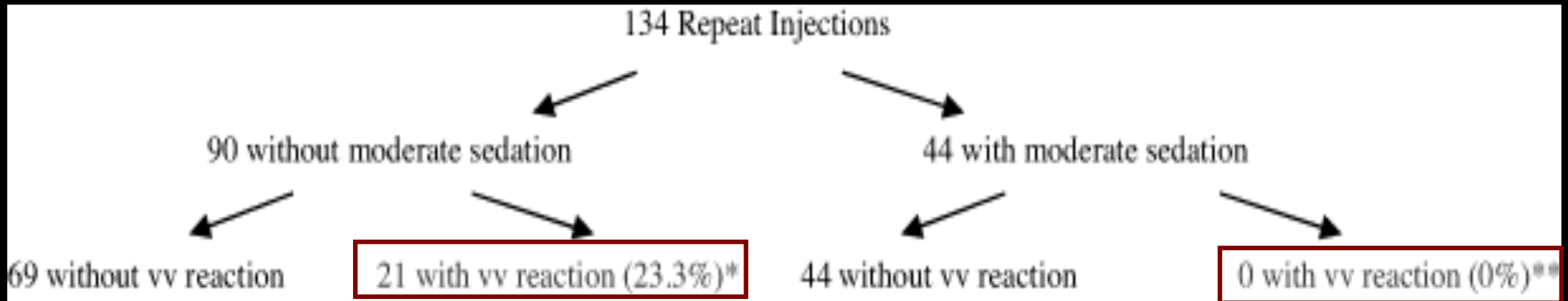
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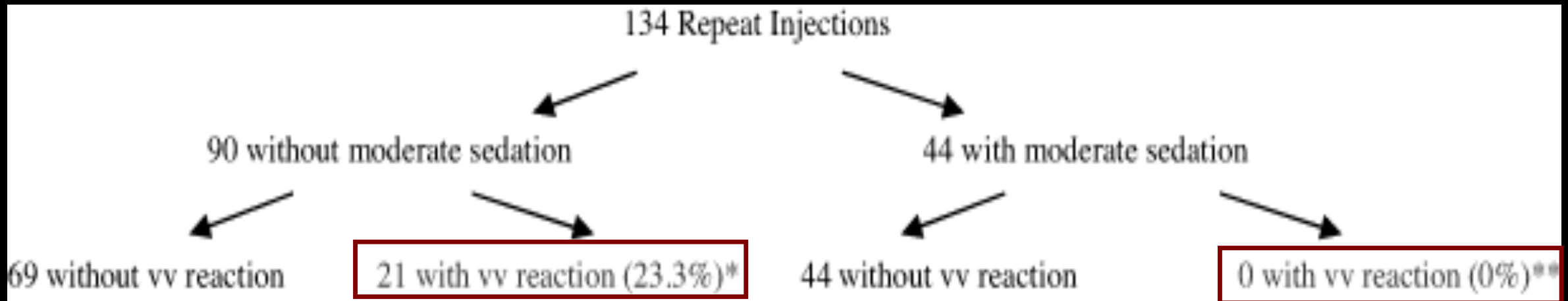
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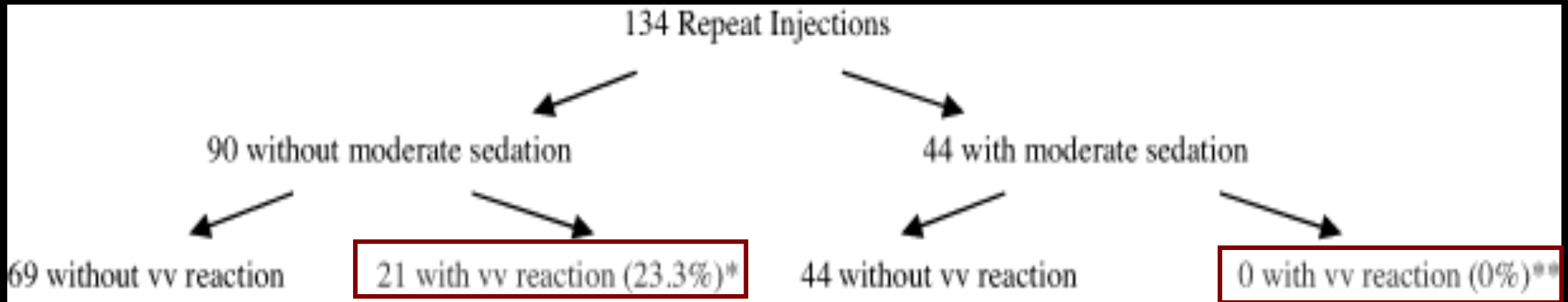
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EFFECTS IN HIGHER RISK POPULATION



95% CI= 15.8-33.1%

95% CI= 0-8%



All Truth in a 2x2 Table – *Cohort with History of VV*

	VV	No VV	
No Sedation	21	69	90
Sedation	0	44	44
	21	113	134
$\chi^2 = 12.17 (P < 0.00048)$			



Conclusions

- 1. Sedation is not routinely necessary, as evidenced by large volume of patients not requiring it
- 2. In our hands VV occurred at a rate of 3.5% for all
- 3. Increased to 21% for those with a history of VV
- 4. Mild sedation for anxiety may abate this risk in select at risk populations
- 5. Future research on oral anxiolytics is warranted



References

- 1. Kennedy, D. J. *et al.* Vasovagal Rates in Flouroscopically Guided Interventional Procedures: A Study of Over 8,000 Injections. *Pain Med.* **14**, 1854–1859 (2013).
- 2. Diehn, F. E. *et al.* An audit of transforaminal epidural steroid injections without sedation: low patient dissatisfaction and low vasovagal rates. *Pain Med. Malden Mass* **14**, 994–998 (2013).



Thank You!

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