

## **PUBLICATIONS: NEURAXIAL DRUG ERROR:**

*All review articles and abstracts are the first publications in the history of anaesthesia literature.*

### **■ Accepted for presentations:**

Accepted for presentation at Association of Anaesthetists meeting in Edinburgh, UK in September 2023.

1. Inadvertent neuraxial antibiotic administration incidents - A review of the literature. [For oral presentation].
2. Review of neuraxial paracetamol, nonsteroidal anti-inflammatory analgesics and antiemetics errors.
3. Intrathecal tranexamic acid incidents in India – A problem of look-alike ampoule or a physician's incorrect visual perception?

### **■ PUBLISHED: Peer review publications.**

#### **Editorial**

**Patel S.** Safe spinal anesthesia practices to prevent intrathecal tranexamic acid incidents. *Journal of clinical anesthesia* 2022;;82:110889.

Cited by 3 as per Google scholar

<https://www.sciencedirect.com/science/article/abs/pii/S0952818022002471?via%3Dihub>

#### **Medical Intelligence Article:**

**Patel S, Loveridge R:** Obstetric neuraxial wrong drug administration errors: A quantitative and qualitative analytical review. *Anesth Analg* 2015; 121:1570-1577  
**DOI:** <https://doi.org/10.1213/ANE.0000000000000938>

Cited by 45 as per Google Schola

(Our research in the article was included in 'What is new in Obstetric Anesthesia : The 2016 Gerard W Ostheimer Lecture' by Philip E Hess published in *Anesth Analg* 2017; 124:863-871)

(Our work was included in "Survey of Anesthesiology". Patel, Santosh; Loveridge, Robert Obstetric Neuraxial Drug Administration Errors, *Survey of Anesthesiology*: December 2016 - Volume 60 - Issue 6 - p 250  
doi: 10.1097/01.sa.0000504624.15149.36)

#### **Review Articles:**

**Patel S.** Tranexamic acid-associated intrathecal toxicity during spinal anaesthesia

A narrative review of 22 recent reports. *European J of Anaesthesiology* 2023; 40: 334-342.

In addition, three supplemental files (13 pages) are also published (literature search strategy – 1 page, Clinical case analysis table -11pages, Human factors 1 page).

[https://journals.lww.com/ejanaesthesiology/Abstract/9900/Tranexamic\\_acid\\_associated\\_intrathecal\\_toxicity.70.aspx](https://journals.lww.com/ejanaesthesiology/Abstract/9900/Tranexamic_acid_associated_intrathecal_toxicity.70.aspx)

**Patel S.** Cardiovascular drug administration errors during neuraxial anesthesia or analgesia—A narrative review. *Journal of Cardiothoracic and Vascular Anesthesia* 2023; 37: 291-298

In addition, three supplemental files (16 pages) are also published (literature search strategy – 3 pages, HFACS categories table 1 page, Clinical case analysis table -12 pages)

<https://www.sciencedirect.com/science/article/abs/pii/S1053077022007686>  
[https://www.jcvaonline.com/article/S1053-0770\(22\)00768-6/fulltext](https://www.jcvaonline.com/article/S1053-0770(22)00768-6/fulltext)  
<https://doi.org/10.1053/j.jvca.2022.10.016>

Cited by 1

**Patel S,** Dexter F. Narrative review of neuraxial potassium chloride administration errors: clinical features, human factors, and prevention measures. *Regional Anesthesia & Pain Medicine* 2021; 46: 904-908 doi: 10.1136/rapm-2021-102933

In addition, two supplemental files (19 pages) are also published (search strategy – 6 pages, clinical case analysis table – 13 pages)

<https://rapm.bmj.com/content/46/10/904.abstract>

Cited by 6 as per Google scholar

**Patel, S.** Erroneous neuraxial administration of neuromuscular blocking drugs. *European Journal of Anaesthesiology* 2020; 37: 857-863

[https://journals.lww.com/ejanaesthesiology/fulltext/2020/10000/erroneous\\_neuraxial\\_administration\\_of.5.aspx](https://journals.lww.com/ejanaesthesiology/fulltext/2020/10000/erroneous_neuraxial_administration_of.5.aspx)

Cited by 7 as per Google scholar.

**S Patel,** B Robertson, I McConachie. Catastrophic drug errors involving tranexamic acid administered during spinal anaesthesia. *Anaesthesia*. 2019; 74: 904-14  
<https://onlinelibrary.wiley.com/doi/abs/10.1111/anae.14662>

- Cited by 61 as per Google scholar

- This article is accompanied by an editorial – A Palanisamy and S M Kinsella: Spinal tranexamic acid – a new killer in town. *Anaesthesia* 2019; 74: 831-3  
<https://onlinelibrary.wiley.com/doi/10.1111/anae.14632>)
- The article was selected as one of the top 10 articles for 2019 for ‘Anaesthesia’ journal.  
<https://associationofanaesthetists-publications.onlinelibrary.wiley.com/hub/journal/13652044/homepage/top10-2019>
- The article has a high Altmetric Score.
- The article was a topic for publication in ‘Anesthesiology News’ June, 2019.  
<https://www.anesthesiologynews.com/Clinical-Anesthesiology/Article/06-19/Spinal-Administration-of-Tranexamic-Acid-Catastrophic-and-Avoidable/55134>
- The article was used by Institute for Safe Medication Practices, USA to include intrathecal tranexamic acid as one of the top 10 hazards to avoid for 2020.  
<https://www.ismp.org/resources/start-new-year-right-preventing-these-top-10-medication-errors-and-hazards>
- The article was Editor’s pick for June 2020 issue of *Obstetric Anesthesia Digest* (Patel, S.; Robertson, B.; McConachie, I. Catastrophic Drug Errors Involving Tranexamic Acid Administered During Spinal Anesthesia, *Obstetric Anesthesia Digest*: June 2020 - Volume 40 - Issue 2 - p 57-58  
[https://journals.lww.com/obstetricanesthesia/Abstract/2020/06000/Catastrophic\\_Drug\\_Errors\\_Involving\\_Tranexamic\\_Acid.5.aspx?context=LatestArticles](https://journals.lww.com/obstetricanesthesia/Abstract/2020/06000/Catastrophic_Drug_Errors_Involving_Tranexamic_Acid.5.aspx?context=LatestArticles)  
doi: 10.1097/01.aoa.0000661304.69019.e3)
- It is referenced in an alert by World health organization  
<https://www.who.int/news/item/16-03-2022-risk-of-medication-errors-with-tranexamic-acid-injection-resulting-in-inadvertent-intrathecal-injection>
- Institute for Safe Medication Practices, Canada used the article and referenced in newsletter alert published in May 2022.  
<https://ismpcanada.ca/bulletin/alert-substitution-error-with-tranexamic-acid-during-spinal...>

**Correspondence/ Letter to editor:**

**Patel S.** Accidental infusion of tranexamic acid via a thoracic epidural catheter. *Canadian Journal of anesthesia* 2023; 70: 915-916.

<https://link.springer.com/article/10.1007/s12630-023-02435-0>

Cited by 3

The above letter is accompanied with-

1. An Editorial: [Preventing neuraxial administration of tranexamic acid](https://link.springer.com/article/10.1007/s12630-023-02434-1)  
<https://link.springer.com/article/10.1007/s12630-023-02434-1>
2. Editor in Chief (EIC)'s notes: [One week in the life of my anesthetic cart's medication drawer or: drug errors—what \(else\) will it take to change the system?](https://link.springer.com/article/10.1007/s12630-023-02437-y)  
<https://link.springer.com/article/10.1007/s12630-023-02437-y>

**Patel S.** Epidural and intrathecal magnesium sulphate administration errors – clinical features and contributory factors. British J of Anaesthesia 2023; 130: E35-40

In addition, one supplemental file is also published (1 page).

<https://www.sciencedirect.com/science/article/abs/pii/S0007091222007401>  
[https://www.bjanaesthesia.org/article/S0007-0912\(22\)00740-1/fulltext](https://www.bjanaesthesia.org/article/S0007-0912(22)00740-1/fulltext)

I reviewed magnesium sulphate administration errors via neuraxial route.

**Patel S.** Neuraxial and peripheral misconnection events leading to wrong-route medication errors. Reg Anesth Pain Med. 2021;48:1116-1117 doi: 10.1136/rapm-2021-102527.

<https://rapm.bmj.com/content/46/12/1116.info>

### **ISMP Guideline:**

Institute for safe medication practices (Canada): Substitution errors with tranexamic acid during spinal anesthesia. ISMP Canada Safety Bulletin 2022; Issue 6: 1-5.

<https://ismpcanada.ca/bulletin/alert-substitution-error-with-tranexamic-acid-during-spinal-anesthesia/>

### **Abstracts in Journals:**

**Patel S:** Avoidable intrathecal tranexamic acid tragedies: 2019–2021. Anaesthesia 2021;76 (Suppl 6):17 **[ORAL PRESENTATION]**

Cited by 1

**Patel S,** Paskaleva R, Agrawal D. 185 neuraxial drug administration errors from 40 countries – practical issues and human factors. Regional Anesthesia & Pain Medicine 2021;**70**:A21-A23.

[https://rapm.bmj.com/content/70/Suppl\\_1/A21.2](https://rapm.bmj.com/content/70/Suppl_1/A21.2)

**Patel S,** Dexter F. Neuraxial cardiovascular accidental drug administration errors review. Regional Anesthesia & Pain Medicine 2021;**70**:A24-A25.

[https://rapm.bmj.com/content/70/Suppl\\_1/A24](https://rapm.bmj.com/content/70/Suppl_1/A24)

Cited by 1

**Patel S** and Daxter F: Case Series Of 28 Neuraxial Kcl Administrations Shows Half The Errors Are Not Preventable By NrFit. [www.asaabstracts.com](http://www.asaabstracts.com) A2042, 2020  
**[ORAL PRESENTATION]**

<http://www.asaabstracts.com/strands/asaabstracts/abstract.htm?year=2020&index=18&absnum=4742>

Cited by 1 as per Google Scholar.

**Patel S:** Morbidity And Mortality Associated With Drug Administration Errors During Spinal Or Epidural Anesthesia Or Analgesia. [www.asaabstracts.com](http://www.asaabstracts.com) A2045, 2020  
**[ORAL PRESENTATION]**

Cited by 1 as per Google Scholar.

**Patel S.** Drug administration errors during epidural or spinal anesthesia or analgesia. Anesth Analg 2012; 113:S-197 **[ORAL PRESENTATION]**

(This abstract was selected as the best abstract in 'patient safety and education' category and was selected for **Kosaka Abstract Award** competition at the 86<sup>th</sup> International Anesthesia Research Society meeting held in Boston, USA in May, 2012)

**Patel S, Patel S.** Epidural and spinal drug injection errors during obstetric anesthesia and analgesia (1981-2011). Anesth Analg 2012; 113:S-329

The above two abstracts presented at International Anaesthesia Research Society (IARS) meeting in Boston, USA in 2012 were featured in 'Anesthesiology News'.  
<https://www.anesthesiologynews.com/Clinical-Anesthesiology/Article/09-12/Review-of-Avoidable-Regional-Errors-Exposes-Shocking-Lapses/21543>