TItle:

Hypercapnic Respiratory Failure is an Infrequently Detected Adverse Effect in Clinical Trials (or something similar)

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Introduction:

Many medications are either known or suspected to contribute to the development of hypercapnic respiratory failure (cite: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10503117/> ). In some cases (e.g. opiate induced respiratory depression), the extent of the problem becomes apparent only after widespread (which sucks). We evaluated how frequently hypercapnic respiratory failure is reported as an adverse effect in clinical trails reported to [clinicaltrials.gov](http://clinicaltrials.gov).

Methods:

We utilized data from [clinicaltrials.gov](http://clinicaltrials.gov) (accessed Dec 25th, 2022) as parsed by Shi and Du1, who trained a transformer natural language processing model (BioBERT2) to extract study arm-level  trial elements from each trial’s registration page. Based on a manual review of reported adverse effects, trials reporting at least one either plausibly or definitively AE to hypercapnic respiratory failure or respiratory depression were tabulated. \*\*\* categorization etc.

Results:

Of \*\*\* trials uploaded to [clinicaltrails.gov](http://clinicaltrails.gov), \*\*\* reported outcomes and/or adverse effects - totallying roughly n=\*\*\*\* patients . Of these \*\*\* reported an adverse effect plausibly related to Hypercap, and \*\*\*

Categories \*\*\* split / represent how you see fit. [ no figure allowed at this point ]

Conclusions:

Not all that many reports of hypercapnia AE, definitely not for lots of implicated drugs. Does this result from studying healthy patients, not looking, or something else?

limitation: unclear how many events that are coded as “respiratory failure” “respiratory arrest” or “cardiac arrest” might be unidentified respiratory depression, hypercapniua, or hypoventilation.

1.             Shi X, Du J. Constructing a finer-grained representation of clinical trial results from ClinicalTrials.gov. *Sci Data*. 2024;11(1):41. doi:10.1038/s41597-023-02869-7

2.             Lee J, Yoon W, Kim S, et al. BioBERT: a pre-trained biomedical language representation model for biomedical text mining. *Bioinformatics*. 2020;36(4):1234-1240.