

Abstract Title: Analysis of The Sentiment & Growth of Transversus Abdominis Plane Block Trial Literature Using Natural Language Processing

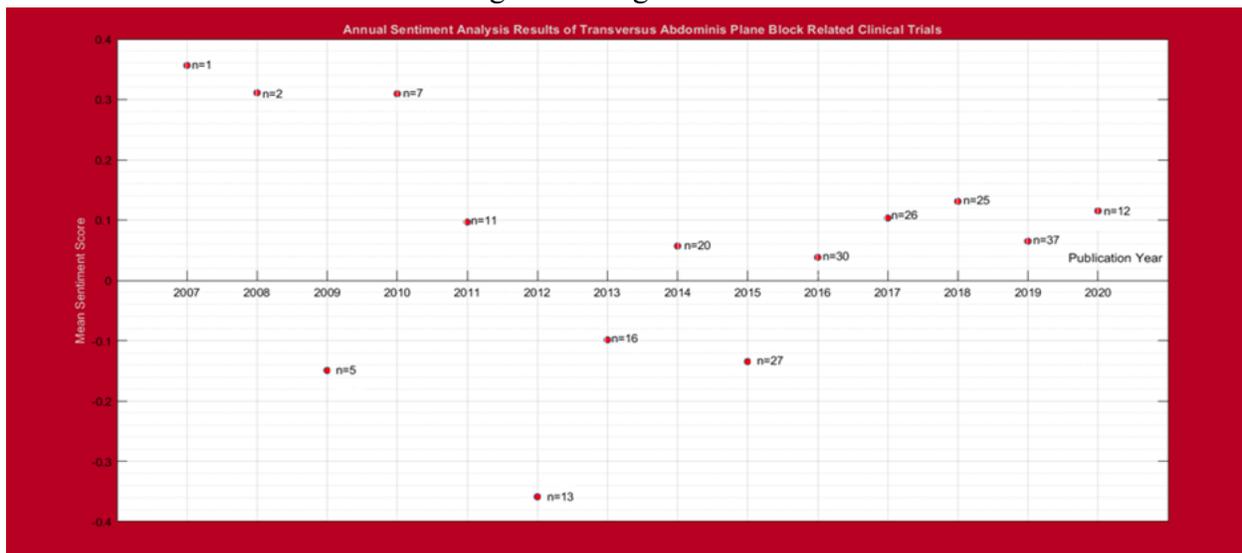
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Introduction: The Transversus Abdominis Plane (TAP) block is a nerve block technique first formally described in the literature in 2001, then in an expanded clinical context for retroperitoneal prostatectomy in 2006 and further refined in a clinical trial published in 2007. Since its initial description, the body of literature regarding the TAP block and its potential indications have grown significantly, with varying opinions on the topic. This study seeks to explore the trends in sentiment expressed regarding the TAP block in clinical trials since its inception using sentiment analysis.

Methods: The data collected for this study was abstract data from English language clinical trials available in PubMed that related to the search term “Transversus Abdominis Plane Block”. The number of articles by year was recorded, then each text abstract was analyzed using VADER sentiment analysis to determine the average sentiment score by year. This algorithm works by assigning a value of -1 (highly negative) to 1 (highly positive) to a body of text based on the sentiment expressed within the text as determined by the types of language used.

Results: A total of 232 clinical trials were found that met the described search criteria, with their annual distribution shown below in Figure 1 alongside the sentiment values.



Discussion: The number of clinical trials published describing and evaluating the TAP block experienced peaks in the years 2016 and 2019 and have consistently risen since their introduction in 2006. Interestingly, these years do not correspond to the highest average annual sentiment scores with more positive sentiment earlier; These results are potentially confounded by the techniques novelty at that time, the propensity for publication bias of positive studies and the limited number of early clinical trial publication. The available scientific literature clearly demonstrates that the TAP block continues to be associated with a positive published sentiment. Further studies will be required to determine if this positive sentiment and pattern of sentiment change over time is similar for other regional procedures.