(32% and 25%, respectively) and hookah users (44% and 36%, respectively). Tobacco flavor was the most common among regular users of traditional cigars (80%), cigarillos/filtered cigars (55%), and smokeless tobacco (79%). Polytobacco users of ENDS and traditional cigars had the largest discrepancy, where about 68-76%% used different flavor categories when switching products. Conversely, polytobacco users of traditional cigars and cigarillos/filtered cigars had the lowest discrepancy (23-25%). DISCUSSION/SIGNIFICANCE OF IMPACT: Many consumers of multiple tobacco products had different flavor preferences when switching between products. In the event of a partial or full flavor ban for ENDS, these findings raise questions about consumer loyalty to a particular tobacco product or a particular flavor category. Conflict of Interest Description: MLG serves as a paid consultant for Johnson & Johnson and has received research grant from Pfizer, manufacturers of smoking cessation medications. The other authors have no conflicts to declare. CONFLICT OF INTEREST DESCRIPTION: MLG serves as a paid consultant for Johnson & Johnson and has received research grant from Pfizer, manufacturers of smoking cessation medications. The other authors have no conflicts to declare.

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Effects of Injectable, Erythropoietin and Glucocorticoids Combinational Therapy on Erythrocyte Sedimentation Rate Following Spinal Cord Injury

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OBJECTIVES/GOALS: Inflammation following traumatic injury to the spinal cord persists long after the primary insult and is known to increase complication rates and prolong recovery time. We investigated the effects of Erythropoietin (EPO) in combination with Glucocorticoids on the levels of erythrocyte sedimentation rate (ESR), an overall measure of inflammation. METHODS/STUDY POPULATION: Electronic medical records from approximately 38 million patients in 27 Healthcare Organizations were analyzed using the TriNetX Analytics platform. Patients with spinal cord injuries (SCI) were defined with the ICD-10 code, G95 and two unique cohorts were defined for patients treated with injectable EPO in combination with injectable Glucocorticoids within 6 months of SCI or only injectable Glucocorticoids with no injectable EPO. ESR rates were queried from patient cohorts to evaluate the potential effects of the two treatment pathways on the ESR. Most recent lab results within 6 months before initiating treatment and 1-year post-treatment were defined as "before" and "after" treatment, respectively. Changes in ESR lab results were evaluated using unpaired t-test with Welch's Correction. RESULTS/ANTICIPATED RESULTS: A total of 14,370 patients satisfied the inclusion criteria. 89 patients were treated with injectable EPO in combination with Glucocorticoids within 6 months of SCI. The ESR lab results were available for 33 patients before treatment with a mean of 63±33 mm/h. The ESR lab results were available for 22 patients after treatment with a mean of 51.7±34.1 mm/h. 14,281 patients were treated with Glucocorticoids (no injectable EPO) within 6 months of SCI. The ESR lab results were available for 2,042 patients before treatment with a mean of 29.2±30.5 mm/h. The ESR lab results were available for 2,184 patients after treatment with a mean of 32.6±30 mm/h. Patients treated with combinational therapy showed a reduction in ESR of 11.3 mm/h, while those treated with only Glucocorticoids showed an increase in ESR of 3.4 mm/h. DISCUSSION/SIGNIFICANCE OF IMPACT: The present results demonstrated that combinational therapy with injectable, EPO and glucocorticoids exhibited a significant reduction in ESR level. The study suggests that EPO and glucocorticoid might have a synergistic effect on reducing the inflammation following SCI. This approach might help reduce the therapeutic dose of glucocorticoids. Conflict of Interest Description: The authors declare that they have no competing interests. CONFLICT OF INTEREST DESCRIPTION: The authors declare that they have no competing interests.

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Estimates of Dose Response using the Dixon Up-and-Down Method and BOIN study designs

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OBJECTIVES/GOALS: The Dixon up-and-down method (U/D), original developed for testing explosives, is especially common in anesthesia research studies. The objective of this research is to compare the performance of the U/D method for obtaining and analyzing sensitivity data with that of the Bayesian Optimal Interval (BOIN) method. METHODS/STUDY POPULATION: A simulation study will compare the performance of the U/D method with the BOIN design. The two study designs offer alternative decision-making algorithms with respect to the dose at which the next experimental unit is treated. These alternative decisions may impact the precision of point estimates of the mean and standard deviation of the effective dose to elicit a response. Transition probability matrices are developed, and maximum likelihood estimates of the unknown parameters assessed for accuracy. For simulation, the effective dose is assumed to be randomly distributed with a known mean and standard deviation. Fixed dose levels are defined, and decisions for what level the next experimental unit should be treated at are defined by the Dixon up-and-down method and the BOIN design. For the U/D method, the stimulus is increased by one level in the absence of a response or decreased if a response occurs from an initial stimulus. A target toxicity probability of 0.50 is used to define the dose escalation or de-escalation rules for the application of the BOIN design. RESULTS/ANTICIPATED RESULTS: A feature of both methods is that the consecutive observations are concentrated about the mean value of the effective dose. However, the BOIN design tends to be more concentrated between these two dose levels. In the presence of severe adverse events, the BOIN design can choose to eliminate doses that are too toxic whereas the U/D design cannot eliminate any dose levels. Transition probability matrices are defined and parameters for the distribution of the effective dose are estimated using maximum likelihood estimation. Mean squared errors for the estimated mean and standard deviations compare the two study designs. DISCUSSION/SIGNIFICANCE OF IMPACT: The BOIN design offers an alternative method for decision-making compared with the U/D method. The BOIN design tends to concentrate dose levels about the mean more than the U/D. This may provide better estimates of the mean and standard deviation of the effective dose for eliciting a response in some circumstances.

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Harnessing the Power of the Electronic Medical Record in Interstitial Lung Disease

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OBJECTIVES/GOALS: Harnessing the EHR to support clinical research is critical for the study of rare diseases such as interstitial lung disease (ILD). However no studies have compared EHR and

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