clinical care. We evaluated the association between daytime sleep propensity and treatment regimen/standardized dose, a measure of drug burden, in patients with narcolepsy type 1 (NT1)/type 2 (NT2) and idiopathic hypersomnia (IH).

Methods: Patients ≥18yrs with NT1/NT2 and IH presenting to the Cleveland Clinic Sleep Disorders Center from 2008-2010 with completed Epworth Sleepiness Scales (ESS) at baseline and ≥6mo follow-up were included. A standardized variable of the amount of drug taken daily was determined using established World Health Organization methods. Standardized dose (STD)>1 indicated dose regimens higher than average for a single drug in adults. ESS change by treatment regimen (monotherapy vs polytherapy) and STD was assessed by t-tests and univariable/multivariable linear regressions, adjusting for patient characteristics.

Results: 92 patients (26(28.3%) NT1, 27(29.3%) NT2, 39(42.4%) IH) were included (age 43.8±14.8yrs; 66(71.7%) female). At baseline, 59(64.1%) used monotherapy with average STD 1.0[0.0,2.5] and ESS 14.2±5.2(68 patients>10). Between time points, polytherapy increased by 24(26.1%) patients, STD increased by 0.7[0.0,1.3], and ESS decreased by 3.6±5.1($p<0.001$; -25 patients>10). Those on polytherapy at follow-up had higher baseline ESS (2.4 greater, $p=0.029$) and were more likely to have NT1/NT2 (39.3% more likely, $p<0.001$) and be taking medication at baseline (25.0% more likely; $p=0.012$). ESS improved comparably between monotherapy and polytherapy groups (mean decrease 3.07 vs 4.47, both $p<0.001$), as well as between NT1/NT2 and IH (mean decrease 4.06 vs 2.95, both $p<0.001$). Only baseline ESS score was significant for predicting ESS change in univariable/multivariable analyses (showing 0.62pt decrease in ESS change per unit increase in baseline ESS). However, after adjusting for baseline ESS, baseline STD, and follow-up time, multivariable analyses showed that ESS change increased by 0.58pts for each 1 unit increase in STD at follow-up($p=0.056$).

Conclusion: While monotherapy/polytherapy analyses show no differences between groups in change in ESS, using a novel STD approach, our findings support a potential paradoxical relationship between drug burden and sleep propensity.

Support (If Any):

0603

NOVEL TREATMENTS SHOULD BE CONSIDERED FOR PATIENTS WITH NARCOLEPSY

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Introduction: Recognized by the National Organization for Rare Disorders, narcolepsy is characterized by debilitating sleepiness (type 1 and type 2) and cataplexy (type 1). Medications for narcolepsy have dangerous side effects and potential for abuse. Patients often have residual symptoms despite treatment. Pitolisant, a selective histamine H3-receptor modulator, recently became available for the treatment of sleepiness and cataplexy. We hypothesized that many patients with narcolepsy have residual symptoms and may benefit from treatment with pitolisant.

Methods: We conducted a retrospective, electronic chart review using ICD-9-CM and ICD-10-CM narcolepsy-related diagnostic codes (347.01; G47.411; 347.00; G47.419; 347.10; 347.11) of outpatients evaluated at Rush University Medical Center between June 2011 and December 2018. Records were queried for demographics, medical comorbidities, polysomnography (PSG) and multiple sleep latency tests (MSLT), symptoms (sleepiness, cataplexy, hypnopompic/hypnogogic hallucinations, sleep paralysis, sleep fragmentation), and medication use.

Results: Of the 97 patients analyzed, patients were predominantly white (56.2%), middle aged (39 years, SD=15.64), overweight (BMI: 28.22, SD= 8.03 kg/m2) and female (58%). A minority of patients had narcolepsy type 1 (35%). On MSLT, the average mean sleep latency and number of SOREMPs was 4.8 minutes (SD=3.9 min) and 2.24 (SD=1.5), respectively. The most common medical comorbidity was obstructive sleep apnea (38.1%), followed by depression (24.7%) and hypertension (19.6%). Only 16.5% of patients reported insufficient sleep (Total sleep time <7 hours). Residual sleepiness and sleep fragmentation were reported in 64.9% and 29.9% of patients, respectively. Among patients with narcolepsy type 1, 59% reported residual cataplexy. Overall, 75.3% of patients reported at least one residual symptom. Modafinil was most commonly prescribed (41.2%), followed by amphetamines (32%), antidepressants (25.8%), and sodium oxybate (21.6%). Many patients were taking at least two medications (26.8%) and some were taking three medications (10.3%).

Conclusion: At a large tertiary care center, over three quarters of patients with narcolepsy reported residual symptoms. Recognizing patients at risk leads to increased access to new treatments, including pitolisant. More research is needed to assess impact of pitolisant access on patient outcomes.

Support (If Any): N/A

0604

TREATMENT PATTERNS AMONG PATIENTS WITH NARCOLEPSY TREATED WITH SODIUM OXYBATE

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Introduction: There is limited real-world data on dosing-related practices and perceptions among patients with narcolepsy treated with sodium oxybate (SXB). This study characterized dosing patterns among narcolepsy patients taking SXB.

Methods: An IRB-approved, cross-sectional, web-based survey targeting 100 patients ≥18 years, with narcolepsy taking SXB for ≥12 months, was conducted. Participants were recruited through community collaborations and patient panels. Participants were asked about their usual SXB dosing regimen and the frequency, reasons, methods and perceptions of varying their SXB dosing regimen to accommodate a change in routine. A subset (N=25) was asked telephonically about how the inability to adjust their SXB regimen would impact their lives. Descriptive statistics summarized survey responses. Voice responses were analyzed thematically.

Results: The cohort (N=110) was 80% female with a mean (±SD) age of 36.9 (±8.9) years. The majority took twice-nightly doses (95%) that were equally divided (80%) with 2.5-4 hours between doses (79%). Of 82 participants that reported varying their SXB dosing at least once in the past 6 months, 29% reported varying at least once-weekly and 35% reported varying several times per month. Staying up late (76%) and waking up early (67%) to be able to attend social events (49%), work events (46%), and eat meals within 2 hours of bedtime (46%) were the most common reasons for varying dosing. Changing timing of the first dose (84%), second dose (69%) and skipping the second dose (44%) were the preferred

methods of adjusting. Seventy-nine percent of participants perceived their ability to vary dosing schedules as important. Of 25 participants who provided voice responses, 68% expressed that losing the ability to vary SXB dosing would have a highly negative impact on their lives.
Conclusion: Participants frequently vary their usual SXB dosing regimen to accommodate changes in their routine. Participants perceive the ability to vary as important and predict facing significant limitations in day-to-day activities if unable to vary. Further investigation to identify real-world SXB dosing, association with goal attainment, and impact on sleep and other outcomes is warranted.
Support (If Any): Jazz Pharmaceuticals.

0605

SODIUM OXYBATE DOSING UTILIZATION PATTERNS IN THE NEXUS NARCOLEPSY REGISTRY

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Introduction: The recommended dosage range for sodium oxybate (SXB) among adults with narcolepsy is 6-9g per night orally, divided into 2 equal doses. The objective of this study was to describe real-world dosing of SXB among adults with narcolepsy.
Methods: The Nexus Narcolepsy Registry is an ongoing, self-reported online registry of adults diagnosed with narcolepsy. The study identified SXB users who had reported dosage data and compared those currently taking SXB vs those who previously discontinued. Of current users, those taking SXB <3 months (hereafter "new users") vs ≥3 months (hereafter "established users") also were compared. The survey assessed once-nightly or twice-nightly SXB dosing across the dose range (<4.5g, 4.5-<6g, 6-<9g, 9g, >9g), and equally-divided (1st dose=2nd dose) vs asymmetric dosing (1st dose≠2nd dose). Descriptive analyses and *t* tests assessed sample characteristics and dosing patterns. All *P* values are uncontrolled for multiplicity, hence, are nominal.
Results: Among all participants reporting SXB use (n=365), 65% were current users and 95% took SXB twice nightly. Average total nightly dose (standard deviation) was 7g (±1.9) and 3.6g (±0.9) for twice-nightly and once-nightly dosing, respectively. Among those who took SXB twice nightly, the total nightly dose was lower in those who discontinued vs current users (5.9g ±2.1 vs 7.6g ±1.6; $P<0.001$) and lower in new users vs established users (6.5g ±1.8 vs 7.7g ±1.5; $P<0.001$). Among all SXB users, 66% reported doses within the recommended dosage range of 6-9g per night; 80% of current users and 40% of discontinued users took 6-9g per night. Nearly 30% of all SXB users, 16% of current users, and 55% of discontinued users took <6g per night. Among all SXB users, 84% reported equally-divided dosing. For current new users and current established users, 96% and 83%, respectively, reported equally-divided dosing.
Conclusion: Among SXB users in the Nexus Narcolepsy Registry, the majority reported taking SXB twice nightly, with the total nightly dose equally divided. 17% of current established users reported asymmetric dosing, and 5% of all SXB users reported once-nightly dosing.
Support (If Any): Jazz Pharmaceuticals

0606

ASYMMETRIC AND/OR ATYPICAL DOSING OF SODIUM OXYBATE MAY LEAD TO INCREASED COMPLIANCE AND EFFICACY

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Introduction: Sodium oxybate (Xyrem) is a liquid medication used to treat patients with excessive daytime sleepiness and/or cataplexy associated with narcolepsy. It typically is administered as two equal doses, the first given at bedtime and the second 2.5-4 hours thereafter. Typical doses are 2.25, 3, 3.75, or 4.5 grams per administration.
Methods: A retrospective review of one physician's prescribing practices for all 57 narcolepsy patients treated with sodium oxybate was conducted. Eighteen (32%) patients qualified as having atypical prescriptions (6 with narcolepsy type 1 and 12 with narcolepsy type 2).
Results: Compliance with atypical dosing was 100%. Nine of 18 had post-treatment Epworth Sleepiness Scales (ESS) recorded. (The others will be collected prior to presentation.) Of those, the pre-treatment ESS was 15.8 and post-treatment was 6.1 (p=0.0007, 95% CI=5.5-13.9). Eleven patients (61%) had asymmetric dosing, 10 (56%) taking a larger first and 1 (6%) taking a larger second dose. Five taking larger first doses lowered the second dose due to morning grogginess, 1 said a full second dose induced night sweats, 1 increased the first dose for insomnia, and in 3 the reason was unclear. The patient taking the larger second dose reported improved sleep continuity. Fourteen patients (78%) took atypical dose amounts. Nine patients from this group (64%) overlapped with the asymmetric dosing group. One patient lowered the dose due to transient central deafness, another due to morning anxiety. Two patients (11%) took once nightly doses at bedtime (both 3.75 grams). One indicated full symptomatic benefit from one dose (ESS from 21 to 6). The other could not wake up for the second dose at the time of this manuscript. One patient (6%) was taking 13.5 grams nightly due to inadequate response to lower doses.
Conclusion: Atypical dosing of sodium oxybate is appropriate to ameliorate medication-induced side effects and can maximize compliance and symptomatic benefit. Since sodium oxybate has non-linear pharmacokinetics with a disproportionately higher bioavailability of the second dose, in many such cases lowering the second dose may be beneficial.
Support (If Any): N/A

0607

PATIENTS WHOSE MULTIPLE SLEEP LATENCY TESTS (MSLTS) HAVE FEWER THAN TWO SLEEP-ONSET REM PERIODS (SOREMPS) RESPOND WELL TO SODIUM OXYBATE

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Introduction: MSLT is considered diagnostic for narcolepsy when mean sleep-onset latency (SOL) is less than 8 minutes and there