moderate and high anticholinergic activity respectively. Frequency of the use of drugs having anticholinergic activity prescribed along with cholinesterase inhibitors and NMDA receptor antagonist was compared using the Chi square test.

RESULTS: Of the patients with AD, 654 patients were given cholinesterase inhibitors and 583 patients were prescribed with NMDA receptor antagonist. Most of the patients were prescribed with cholinesterase inhibitors (86.69%) as compared to NMDA receptor antagonist (14.83%). 98.94% of patients on cholinesterase inhibitors and 93.82% on NMDA receptor antagonist were co-prescribed drugs with anticholinergic properties.

Similar percent of patients on cholinesterase inhibitors and NMDA receptor antagonist were co-prescribed drugs with anticholinergic properties. Similar but cardiovascular conditions such as angina (4.8% vs. 2.9%; p < 0.001) were more in MS patients being treated with cholinesterase inhibitors and NMDA receptor antagonist.

CONCLUSIONS: Patients with AD receiving cholinesterase inhibitors or NMDA receptor antagonist appear to be co-prescribed drugs having moderate and high level of anticholinergic activity without any distinction. Physicians should be more prudent in co-prescribing drugs with anticholinergic activity in patients with AD due to the high risk of adverse reactions.

PND4

DIAGNOSIS OF SHIFT WORK DISORDER AND THE IMPACT OF EXCESSIVE SLEEPINESS: RESULTS FROM SHIFT WORKERS, PATIENTS WITH SHIFT WORK DISORDER, AND HEALTH CARE PROFESSIONALS PARTICIPATING IN AN INTERNET SURVEY

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OBJECTIVES: To understand how shift work disorder (SWD) affected the lives of shift workers (SWs) and how SWD was diagnosed from the perspective of health care professionals (HCPs) and SWs.

METHODS: Two separate online surveys were administered to: (1) SWs with/without SWD and (2) HCPs. Participation in the SWs survey was repeated in the previous 2 weeks, a diagnostic tool for SWD over 50:50. The impact of SWD was measured using the Epiworth Sleepiness Scale (ESS), and a score of > 5 on any of the subscales of the Sheehan Disability Scale (SDS). Participation in the HCP survey occurred between 3 years in pre-designated specialties and at least 75% of their time spent in patient care.

RESULTS: A total of 260 respondents completed the SWs survey and 673 the HCP survey. SW negatively impacted respondents’ energy level, social life, and emotional and physical health. SWs also reported a loss of concentration (87%), mistakes (69%), and an injury (11%) at work. Many respondents used caffeine and 57% of diagnosed respondents received prescription medication to treat SWD symptoms. Of those SWs without diagnosed SWD, 23% denied having excessive sleepiness despite scoring > 10 on the ESS and having functional impairment (SDS). For those SWs who consulted with their HCPs, SWs initiated this conversation more than HCPs (82% vs. 13%). HCPs believe that 67% of total SWD is never suspected by physicians and that 50% of SWD is undiagnosed because SWD is often masked by other conditions and/or misdiagnosed. CONCLUSIONS: Respon- dents reported that excessive sleepiness and insomnia associated with SWD seriously impacted their lives at home and at work. SWs do not always recognize their SWD symptoms and are more likely to initiate a diagnosis than HCPs. HCPs believe that SWD is often missed as it is masked by other comorbidities or misdiagnosed.

PD5

ASSESSMENT OF PARKINSON’S DISEASE PROGRESSION RATES BY STAGE OF DISEASE

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OBJECTIVES: To assess Parkinson’s Disease (PD) progression using the Hoehn and Yahr (HY) scale over the complete disease course based on systematic literature review with meta-analysis. No systematic review of PD studies using HY has been undertaken. Such findings could support models to evaluate economic effects of different disease modifying therapies. A systematic review (Med) was conducted to identify research since 1990 that reported longitudinal HY outcomes to obtain progression time data. Reference lists from reviewed articles were also reviewed and supplemented with recommendations from an expert neurologist.

Statistical moments (e.g., survival at time t, median time to progress) were extracted and expected time to progress to the subsequent stage was calculated assuming a constant hazard rate of progression with a binomial distribution for progression rates. Average time to progress through all stages of disease was calculated. Random effects meta-analysis was performed to assess heterogeneity between studies between each stage in progression. Percentages of relevant titles, 56 articles were reviewed. Ten studies, including one open label extension (OLE) trial and nine cohort studies, reported longitudinal HY outcomes for 3,687 patients observed over an average of 13.5 years. Weighted by study sample size, expected time to progress from HY 1 to HY 5 was 162.1 months. The OLE trial had longest expected total progression time (431.8 months, N=110); other studies ranged from 102.0 to 171.7 months. Time from HY stage 1–stage 2, 2–3, 3–4, and 4–5 were 32.3, 60.5, 42.9 and 36.4 months, respectively. Meta-analysis indicated significant heterogeneity in progression time between studies (H2 = 0.95%). Omitting single studies did not affect pooled estimates. CONCLUSIONS: Economic assessment of impacts of PD disease modification can consider expected progression rates over the full course of the disease. Progression rates are most rapid from HY 1 to HY 4.