

known whether faster dissolving formulations of paracetamol granulate result in improved exposure.

Aim and objectives Our objective was to determine the pharmacokinetics (PK) of two different formulations of oral paracetamol in old, frail adults.

Material and methods Geriatric inpatients aged 80 years or older were eligible for inclusion if they received 1000 mg of paracetamol as a tablet or a granulate formulation at 8am, 2pm and 8pm. Samples were collected at trough levels (T0) and at +0.5 (T0.5), +1 (T1), +2 (T2), +4 (T4), +5 (T5) and +6 hours (T6). PK parameters were evaluated for both paracetamol formulations.

Results 36 patients were included, with a mean age (\pm SD) of 86.78 (\pm 4.20) years. Most of the patients (n=26/36, 72%) received the tablet; 10 patients (28%) were prescribed the granulate formulation. Seven (21%) patients achieved an average plasma concentration (C_{ss}) above the analgesic target of 10 mg/L. Median C_{ss} (IQR) for the tablet group was 7.76 (6.31–9.08) mg/L and 9.27 (4.94–11.03) mg/L for the granulate group. T_{max} was 50.5 (31.50–92.50) min and 42.50 (33.75–106.75) min for the tablet and granulate formulation, respectively (p=1.00). C_{max} for tablet users was 15.95 (12.38–21.19) mg/L and 15.59 (10.80–21.77) mg/L for the granulate users (p=0.698).

Conclusion and relevance Large interindividual differences in PK parameters were found in a very old patient sample. Absorption parameters such as T_{max} and C_{max} were not significantly different between the tablet and granulate formulation. A trend for a higher C_{ss} was observed for patients in the granulate group.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

5PSQ-182 ANTICHOLINERGIC BURDEN IN PATIENTS ADMITTED TO A PSYCHIATRIC HOSPITAL

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Background and importance The effect of taking drugs with the capacity to develop anticholinergic adverse effects, both peripheral (urinary retention, constipation, etc) and central (cognitive/functional disorders), is cumulative and may be different depending on the measurement scale used. In the psychiatric population, this effect may be greater due to the type of medication used.

Aim and objectives To analyse the prevalence and risk of anticholinergic burden (AB) in hospitalised psychiatric patients through the use of different calculation scales, and comparison between them to determine the most indicated in our psychiatric sample. To establish the most prescribed antipsychotic medications, and to determine if there are differences between the short stay unit (CSU) and the long/medium stay ward (LSW).

Material and methods A cross sectional study was conducted in psychiatric patients admitted in the last month. Variables collected were: demographic (age, sex), hospitalisation unit, number of drugs with AB and their anticholinergic risk according to the following scales: anticholinergic drug scale (ADS), anticholinergic risk scale (ARS), drug burden index

(DBI), anticholinergic cognitive burden scale (ACB), Chew's scale (Chew), anticholinergic activity scale (AAS), anticholinergic load scale (ALS), clinician rated anticholinergic scale (CrAS) and Duran's scale (Duran). The variables were obtained from the electronic medical records, and the AB and risk (no risk/low/medium/high) were calculated according to the aforementioned scales, using the AB calculator tool.

Results 67 patients (63% women) were treated with drugs with anticholinergic effects; mean age was 42.9 years. All patients had been prescribed some drug with AB (average number 5). Average number of drugs with AB in the CSU was 3.8 compared with 5.5 in the LSW (p<0.05). The AB on each scale was: 4.3 (high) with ACB; 3.7 (medium) with Chew; 2.3 (medium) with CrAS; 3.3 (medium) with AAS; 2.3 (medium) with ARS; 2.7 (high) with Duran; 2.9 (high) with DBI; 5.3 (high) with ADS; and 1.8 (medium) with ALS. The most prescribed drugs with anticholinergic activity were: benzodiazepines (88.1%), olanzapine (46.3%), antidepressants (41.8%) and quetiapine (37.3%).

Conclusion and relevance The number of psychiatric patients treated with drugs with anticholinergic effects was very high (100%), and statistically higher in the LSW than in the CSU. Studies are needed to determine which of these scales is the most useful to apply in our population. The drugs with anticholinergic activity most prescribed were, by far, benzodiazepines. Withdrawing (progressively), replacing pharmacological treatment (if it cannot be suspended) or reducing the dose (minimum effective dose) would be valid strategies to reduce the anticholinergic burden.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-183 CONCOMITANT USE OF ACETYLCHOLINESTERASE INHIBITORS AND DRUGS WITH ANTICHOLINERGIC PROPERTIES AT ADMISSION BY EMERGENCY DEPARTMENT

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Background and importance Evidence suggests that pharmacological inefficacy and even worsening of conditions in elderly people with dementia may be due to the concurrent use of acetylcholinesterase inhibitors (AChEI) and drugs with anticholinergic properties (DAP).

Aim and objectives To assess the concomitant use of DAP and AChEI at admission to the emergency department (ED).

Material and methods A retrospective observational study was conducted in elderly patients treated with AChEI and DAP at admission to the ED from March to May 2019. Analysed variables were: gender, age, type of AChEI, number of other concomitant prescribed drugs and which of them were DAP, symptoms related to cognitive impairment and discharge destiny. Anticholinergic risk assessment was determined using the consensus scale of Durán *et al*, which classifies different drugs based on their anticholinergic potential (1 mild/2 severe). Statistical analysis was performed by IBM SPSS statistics software

and the results are expressed as means \pm SD for continuous variables and as percentages (%) for categorical variables.

Results 71 patients (53.3% women, mean age 82.7 ± 6.7 (58–94) years) were treated with an AChEI. 74.6% (53 patients) were simultaneously treated with a DAP. Mean concomitant prescribed drugs (DAP and non-DAP) was 11.6 ± 4.7 drugs (2–26). Prescribed AChEI were rivastigmine 56.3%, donepezil 38% and galantamine 5.6%. According to the classification of the systematic review of Durán *et al*, 71 patients were treated with a total of 95 DAP. The seven most frequently prescribed anticholinergic drugs were: quetiapine 39.4%, haloperidol 22.5%, ipratropium 21.1%, trazodone 14.1%, risperidone 12.7%, mirtazapine 7% and tramadol 5.6%. 57.7% of patients had dementia symptoms: confusional syndrome 31%, cognitive impairment 28.2%, mood disturbances 12.9% and somnolence 9.9%. The main destination was hospitalisation 85.9%, followed by hospital discharge 11.3% and death 2.8%.

Conclusion and relevance A high percentage of elderly patients with dementia treated with AChEI were taking concomitant DAP, that present accumulated risk. The combined use of these drugs can increase cognitive impairment and also antagonise the effects of AChEI. The results of the study suggest the need for considering other treatment options or a decrease in the prescriptions for DAPs to reduce the pharmacological interactions and the related adverse effects of concomitant use.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-184 KNOWLEDGE AND ATTITUDE ASSESSMENT OF PHARMACISTS TOWARD TELEPHARMACY IN RIYADH CITY, SAUDI ARABIA

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Background and importance Innovative technologies, such as telepharmacy, have significantly affected patient safety, quality of life and lowered healthcare costs. Telepharmacy has the potential to improve the quality of pharmaceutical care services by decreasing medication errors and adverse drug events. Also, telepharmacy can provide benefits in rural areas and places with a lack of facilities and/or specialist services.

Aim and objectives To evaluate the pharmacist's knowledge about the concept of telepharmacy, the skills required, the proper working environment and the attitude towards telepharmacy in Riyadh, Saudi Arabia, and to recognise any association between demographic factors, knowledge and attitudes towards telepharmacy.

Material and methods A cross sectional multicentre study design was selected by a convenience sampling technique. An anonymous survey was carried out among pharmacists in nine governmental hospitals in Riyadh, Saudi Arabia. A validated self-administered questionnaire was used for the survey to assess knowledge, perceptions and willingness to do telepharmacy. The data were analysed using SPSS V.25. Descriptive statistics, independent t test, the Kruskal–Wallis H test and one way ANOVA were performed.

Results The study achieved a final sample of 465 responses that were valid and complete, with a response rate of 66%. 76% of participants were women and 91% were aged <40 years. 58% of participants had a low level of knowledge about telepharmacy tools, while 37.7% of pharmacists believed that continuous training in telepharmacy was necessary for the workplace. 91.6% of the pharmacists who responded thought that using a telepharmacy system could save time and money. Substantial high positive attitudes towards telepharmacy were demonstrated (87% willingness, 87% perception), but knowledge was limited (58%). A strong association was found between gender perception and willingness (p value was 0.000, 0.009, respectively), and specialty with willingness (p=0.008). A statistically negative correlation was found between perception and gender (0.05 level using Pearson's correlation).

Conclusion and relevance It is reasonable to believe that there is a potential for telepharmacy to be completely incorporated into the healthcare system in the Kingdom of Saudi Arabia if adequate education and training for pharmacists have been given, as knowledge measurement was relatively low. Improving pharmacists' knowledge of telepharmacy is a key factor for effective implementation in the future.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1. ASHP, 'ASHP statement on telepharmacy,' 2016.

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5PSQ-185 ARE ADHERENCE TESTS IN ASTHMA STILL RELIABLE WHEN THE PATIENT KNOWS WHAT WE WANT TO HEAR?

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Background and importance Adherence to medication is very important in chronic diseases, such as asthma. According to the global initiative for asthma (GINA) guidelines, 50% of asthmatic patients on long term therapy fail to take medications as directed, at least some of the time. Furthermore, patients with poor adherence to medication are much more likely to suffer exacerbations.

Aim and objectives To compare the results of subjective adherence tests, such as the validated test of adherence to inhalers (TAI) in asthma with the results of objective adherence tests, such as the dispensing records.

Material and methods In the context of a doctoral thesis starting in January 2020 in a university hospital, every patient prescribed with a biologic agent for severe eosinophilic asthma had periodic interviews with a pharmacist during dispensation of the drugs. A total of 32 patients were recruited and, among other details, patients answered the TAI and their dispensing records for maintenance inhalers were checked by a pharmacist. The results of the TAI (0 to 50) and the dispensing records (0% to 100%) were compared, and the Pearson coefficient of correlation was calculated.

Results All patients answered the TAI and the mean result was 49.25 (46–50). The mean result for the dispensing records was 59% (0–100%) in the previous 6 months. The Pearson coefficient of correlation for these variables was 0.22.