

**Conclusions** The under-prescription of amoxicillin highlights the low compliance with national and international guidelines on pharyngotonsillitis management. More must be done to improve rational use of antibiotics in the ED setting, and educational interventions are strongly needed.

**Disclosure(s)** The study was partially funded by Lombardy Region (EPIFARM project). None of the authors has conflict of interest to disclose

**P19 DRUG USE IN ADOLESCENTS ATTENDING THE EMERGENCY DEPARTMENT FOR MENTAL HEALTH PROBLEMS**

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10.1136/archdischild-2019-esdppp.58

**Background** Scant evidence is available regarding the pharmacological management of acute episodes of mental disorders in children and adolescents attending emergency departments (ED). In this regard, we performed a retrospective study with the aim to evaluate the pattern of psychotropic drug use in an ED of a large hospital.

**Methods** A retrospective chart review of adolescents (13–17 years) visited in the ED of San Paolo University Hospital in Milan for a mental disorder between January and June 2018 was conducted. In particular, information concerning age, gender, type of mental disorder, psychotropic drugs administered in the ED and outcome of the visit were extracted and analysed, using an anonymous patient code.

**Results** A total of 1,298 adolescents 13–17 years old were visited during the observation period, 56 (4%) of whom had a diagnosis of mental disorder (35 females and 21 males).

The most common disorder was predominant psychomotor disturbance (International Classification of Diseases 9 (ICD9) revision code 308.2; 12 patients), followed by anxiety disorder in conditions classified elsewhere (293.84, 8 patients) and anxiety states (300.0, 7 patients).

Ten adolescents were hospitalised, while 16 (29%) received a psychotropic drug in the ED: 14 patients received a benzodiazepine (8 delorazepam, 3 lorazepam), and 2 an antipsychotic drug (risperidone+olanzapine; promazine). Five out of 12 adolescents with psychomotor disturbance received a psychotropic drug (3 delorazepam, 1 lorazepam, 1 risperidone+olanzapine).

Although no randomized controlled trial has evaluated the safety and effectiveness of benzodiazepines in the paediatric population, delorazepam was identified as the first choice pharmacological treatment for agitation in children and adolescents in a local protocol.

**Conclusion** Nearly all children received drugs for which no controlled trials have been performed in the paediatric population and for which the appropriateness is debatable. More evidence is needed to guide the pharmacological management of acute episodes of mental disorders.

**Disclosure(s)** Nothing to disclose

**P20 WITHDRAWN FROM POSTERS, MOVED TO ORALS (039)**

**P21 PBPK MODELING IN PREGNANCY: ACHIEVEMENTS, SHORTCOMINGS AND FUTURE PERSPECTIVES**

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10.1136/archdischild-2019-esdppp.59

**Background** Physiologically-based pharmacokinetic (PBPK) models are considered a promising approach to better characterize and anticipate the effect of physiological changes on pharmacokinetics in pregnant women. Consequently, multiple pregnancy PBPK models have been developed and verified over the past years. Using acetaminophen (paracetamol) as example, PBPK modeling can provide specific insights into the expected pharmacokinetic changes throughout pregnancy.

**Methods** To obtain an overview of pregnancy PBPK models, the scientific literature was systematically screened for publications with a focus on pharmaceutical applications using relevant keywords. Additionally, a pregnancy PBPK model for acetaminophen was developed with the Open Systems Pharmacology software suite ([www.open-systems-pharmacology.org](http://www.open-systems-pharmacology.org)) following an established workflow. After model verification around gestational week 30, the model was scaled to earlier stages of pregnancy and molar dose fractions converted to acetaminophen metabolites were estimated for each trimester.

**Results** Over the past years, more than 60 different pregnancy PBPK models for more than 40 drugs have been published. More than 70% of these models were developed for the third trimester, while few models have been applied to the first trimester. The developed PBPK model for acetaminophen indicated that the median dose fraction of acetaminophen converted to the reactive metabolite N-acetyl-p-benzoquinonimine (NAPQI) was 11%, 9.0% and 8.2% in the first, second and third trimester, respectively, while for non-pregnant women a value of 7.7% was simulated.

**Conclusion** While the overall availability and quality of pregnancy PBPK models is varying considerably, the efforts to establish such models are promising in that they reflect an increased awareness of the necessity to better characterize pharmacokinetics during pregnancy. This is illustrated by the developed PBPK model for acetaminophen where information on NAPQI-formation in vivo is hitherto lacking. Although PBPK models are not a substitute for clinical trials, they constitute an important tool for clinicians in case of missing or incomplete information.

**Disclosure(s)** Nothing to disclose