medicine safety of parenteral ready-to-use all-in-one mixtures, e.g. TPN bags in neonatology. No conflict of interest.

**TCH-046 THE ADVANTAGES OF UV-RAMAN SPECTROSCOPY FOR CHECKING THE STRENGTH OF NALBUPHINE PREPARATIONS**

doi:10.1136/ehjpharm-2013-000276.237


**Background** A paediatric nalbuphine formulation is prepared in the hospital pharmacy of the Nouvel Hôpital Civil of Strasbourg. It was previously checked by HPLC. Following the acquisition of an UV-Raman spectrometer, a method was developed in order to improve the monitoring of nalbuphine preparation.

**Purpose** To cheque paediatric nalbuphine formulations with a simple, fast and reliable method by using UV-Raman spectroscopy.

**Materials and Methods** In order to validate a method using the QC-prep (a UV-Raman spectrometer), we prepared three concentration ranges, prepared by diluting three different samples of nalbuphine reconstituted in 0.9% NaCl. Each range was composed of 5 points of calibration. The linearity was validated from the average of the three ranges. The fidelity of the method is tested by repeatability (one solution was sampled five times by the QC-prep) and reproducibility (five different solutions were sampled at one time). The method is considered as valid if the linearity is good enough ($r^2 > 0.999$) and the coefficient of variation (CV) and relative error of repeatability and reproducibility are below 5%.

**Results** The QC-prep method for nalbuphine 1 mg/ml in 0.9% NaCl is valid in terms of:

- **Linearity**: the calibration is linear from 0.2 to 2.0 mg/ml ($r^2 = 0.9997$)
- **Repeatability**: the CV is less than 0.25%
- **Reproducibility**: the CV is less than 2.5%
- **Accuracy**: the relative error is less than 5%

Five different batches have been checked in routine work. No mistakes have been identified, either in the concentration of the drug (quality control and sample), or in identification of the solvent.

**Conclusions** Calibration of the QC-prep is simple thanks to easy-to-use software. This is a powerful tool that enables us to determine the concentration of nalbuphine more quickly, easily and safely than the HPLC method previously used. The UV-Raman spectroscopy method could be extended to the analysis of other formulations such as paediatric antibiotic preparations. No conflict of interest.

**TCH-048 THE SECURITY OF PHARMACOKINETIC INFORMATION IN ELECTRONIC HEALTH RECORDS**

doi:10.1136/ehjpharm-2013-000276.239


**Background** Accurate and complete electronic health record (EHR) information is essential for patient safety, especially when drugs with a narrow therapeutic range are involved.

**Purpose** To evaluate the quality and quantity of information recorded in EHRs concerning pharmacological interventions (PIs) generated by therapeutic drug monitoring (TDM).

**Materials and Methods** For 6 months, all onco-haematology inpatients were evaluated who were receiving vancomycin ($\geq$ 3 doses). Renal function (RF) was classified into four categories: severe, moderate and mild renal impairment (RI) and normal RF for creatinine clearance (by Cockcroft-Gault equation) <10, 10–50, 50–90, >90 ml/min, respectively. PIs were classified into three categories of importance (high, moderate and low) according to the pharmacotherapy follow-up and the relation between plasma concentration and optimal therapeutic range.

The completeness of EHRs regarding the RF and TDM process (ordering, result and PI-related parameters) was assessed. A binary logistic regression with odds ratio (OR) was performed using SPSS v.15.0.

**Results** TDM was performed for 39 (81%) of 48 patients receiving vancomycin. The median age was 57 years (95%CI: 52–62); 26 were male (68%); 21 (54%) had mild to moderate RI.

There were 76 PIs [median 2/patient (IQR: 2)], 51 (67%), 4 (5%) and 21 (28%) of high, medium and low importance, respectively; 67 (88%) were accepted.
The EHRs did not record RF evolution, TDM requests and results or PIs in 53 (70%), 23 (30%), 39 (51%) and 61 (80%) cases respectively. OR for recorded TDM results related to highly important PIs compared to low-importance PIs, for recorded TDM ordering related to moderate RI compared to normal RF and records for RF evolution related to moderate RI compared to normal RF were 3 (95% CI: 1–9; p = 0.046), 0.3 (95% CI: 0.8–0.9; p = 0.04) and 4 (95% CI: 1–16; p = 0.029), respectively. A significant linear trend was observed. OR for all other variables was non-significant.

Conclusions The low percentage recording of TDM-related variables and pharmacist interventions in EHR potentially limits inter-professional communication and the decision-making process. This fact highlights the need for clinical pharmacists to safeguard the information they have discovered by recording their interventions in the EHR as a clinical episode in comprehensive patient care. This will increase the visibility of the pharmacist and the effect of his/her actions.

No conflict of interest.

**TCH-050** USE OF ELECTROENCEPHALOGRAPHY (EEG)-BASED METRICS TO TEST THE GUSTATORY PROPERTIES OF LIQUID TRIMETHOPRIM FORMULATIONS

doi:10.1136/ejhpharm-2013-000276.241


Background It is well known that the gustatory properties of a formulation strongly affect patient adherence to a treatment. However measuring these properties is highly subjective and difficult, especially for the paediatric population. The use of neuropsychophysiological indexes and covert behaviours in assessing the attractive properties of sensorial stimuli has a long tradition in the domain of affective neuroscience. Ways of measuring range from the use of autonomous nervous system activation patterns, to features extracted from electroencephalographic activity or simple and discriminative reaction time tasks. These measurements provide alternative means for assessing the characteristics of commercial products, overcoming the limitations of self reporting-based research, namely social desirability, and for studying populations unable to provide usable verbal responses (e.g. children).

Purpose To find out if this methodology can be used for evaluating the gustatory properties of formulations in order to enhance patient adherence.

Materials and Methods Trimethoprim formulations were prepared using NF syrup. Flavour was added afterwards. Participants were stimulated with 3 different flavoured formulations (banana, red berry and neutral) for 10 seconds each while subjected to an EEG recording. The order of presentation was fully counter-balanced between subjects. Subjects rated the different solutions for palatability and intensity. Five seconds of the EEG response for each sample were converted to the frequency domain, and the log power was calculated for anterior, central and parietal electrodes. Different algorithms, combining different EEG features, were tested for predictive power regarding palatability and type of formula.

Results Theta inter-hemispheric activity at parietal electrodes predicted the behavioural assessment of palatability (R2 = 0.85). Moreover, the application of unsupervised learning methods, such as Support Vector Machines, on the log power at different bands from 0 to 12 Hz, could distinguish with up to 95.24% accuracy between flavoured and non-altered solutions.

Conclusions This technology can be used in formulation studies that are attempting to enhance the organoleptic properties of a formulation.

No conflict of interest.