levels. However, they are also associated with deleterious outcomes.

Purpose We aimed to characterise the impact of blood transfusions in length of stay (LOS) and in-patient mortality, in a population of hospitalised anaemic patients treated with IV iron.

Material and methods This was a retrospective cohort study. Patient records from a Portuguese General Hospital, with at least one inpatient administration of iron sucrose (IS) in 2014–2015 or ferric carboxymaltose (FC) in 2016 (when FC became available), were reviewed. Adult anaemic patients with at least one Hb evaluation before and after the administration of IV iron were included. Endpoints assessed comprised the association of blood transfusions with LOS and in-patient mortality, adjusted for sex, age and baseline Hb level. Statistical analysis included a generalised linear mixed-effects model and logistic regressions, using a 5% significance level.

Results Data was collected for 1178 patients, of which 878 were treated with IS and 300 with FC. Mean age was 63.9 and 71.1 for patients treated with IS and FC, respectively. The majority of patients were female: 61.4% and 51.3% for the groups treated with IS and FC, respectively. Average baseline Hb level was 8.4 g/dl for both groups. The majority of patients required blood transfusions in both groups: 58.0% in the IS and 62.9% in the FC.

Receiving at least one blood transfusion increased the LOS by 21% (95% CI: 8 to 35) in the IS group and 28% in the FC group (95% CI: 3 to 60).

The in-hospital mortality risk increased 2.5-fold (95% CI: 1.4 to 4.3) in patients treated with IS and who received a blood transfusion. As for patients treated with FC, in-hospital mortality was 4.3 times (95% CI: 1.6 to 12.1) higher in patients who received a blood transfusion.

Conclusion Blood transfusions impacted adversely on patients' outcomes across different groups. Therefore, blood transfusions should be carefully considered, in accordance with the most recent patient blood management guidelines.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest Corporate-sponsored research or other substantive relationships: this study was developed with financial support from Vifor Pharma. The authors had no restrictions or limitations during the study.

5PSQ-017 IMPLEMENTATION AND MONITORING OF A PROTOCOL FOR THE USE OF INTRAVENOUS IRON

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10.1136/ejhpharm-2019-eahpconf.450

Background The Pharmacy and Therapeutics Committee approved in May 2017 a protocol for the prescription of intravenous iron in order to achieve the correct use of it in the hospital, and the establishment of an iron sucrose complex as first choice in admitted patients.

Purpose The objective of this study was to assess the degree of adaptation of the prescriptions to the protocol.

Material and methods We conducted a retrospective observational study from May 2017 to July 2018. In order to assess the degree of adaptation of the prescriptions it was checked if the requests were received correctly completed for type of patient (inpatient or outpatient), medical service, diagnosis and cause and patient's bodyweight, and if there were iron metabolism data (transferrin saturation, serum ferritin and iron) previous to the request.We also recorded the pharmaceutical product prescribed (ferric carboxymaltose or sucrose). Likewise, we reviewed if administered doses were correct, taking into account the theoretical deficiency calculated according to the Ganzoni formula. Dosage was considered correct if the difference between the administered dose and the theoretical deficiency did not exceed ±500 mg in ferric carboxymaltose and ±200 mg in sucrose.

Results A total of 271 prescriptions were analysed (outpatients 51.3%). The internal medicine department was the main service prescriber (47.2%), followed by the gastroenterology department (21.8%).

The principal medical diagnosis was anaemia. The cause was unknown in 35.5% of patients. Concerning the three main reasons for prescription, in descending order they were: need for fast iron replenishment (56.5%), inefficiency or intestinal malabsorption syndromes (14.7%) and intolerance to oral iron or impossibility to an oral regimen (11.4%) The reasons were unknown in 4.1%. Data of iron metabolism was not available in 34.7% of requests.

Ferric carboxymaltose was the pharmaceutical product chosen in most of the patients (54.6%), of which 62% were outpatients. The total dose administered did not match the theoretical deficiency calculated in 41.3% of cases.

Conclusion The lack of data in many orders received in the pharmacy department makes it difficult to verify the appropriateness of the prescription to the protocol in many cases. This highlights that protocolisation is a dynamic process which requires a continuous assessment to ensure its utility.

Ferric carboxymaltose was used more frequently in iron replenishment in outpatients and iron sucrose in hospitalised patients.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

5PSQ-018 IMPLEMENTATION OF PARENTERAL NUTRITION PRESCRIBING SOFTWARE IN A NEONATAL INTENSIVE CARE UNIT

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10.1136/ejhpharm-2019-eahpconf.451

Background Parenteral nutrition in neonatal intensive care units is a daily activity with extreme risks. These risks are mainly related to the immaturity of neonates, a sensitive population. The computerisation of the process of prescription is a promotional tool to reduce the risks.

Purpose This study aimed to assess the interest in implementing software to help prescribers of parenteral nutrition in neonatology.

Material and methods This prospective comparative study was conducted in a neonatal unit, during a period of 3 months. It looked to evaluate the process of preparation of parenteral nutrition mixtures before and after the implementation of the prescribing software. This software was developed and validated by a team of doctors and pharmacists. The evaluation was performed by making a comparison between the errors that occurred during the manual

prescribing phase and those that occurred during the computerised phase. All steps of the process were assessed using a data collection sheet. Statistical analysis was performed by PSPP software.

Results Fifty pockets of parenteral nutrition were examined during both phases. This study showed a statistically significant improvement in considering both the sodium and fluid intake of the other drugs prescribed with: OR=0.40, 95% CI: 0.30 to 0.58, p<10–3, OR=0.30, 95% CI: 0.19 to 0.45, p<10–^{3}, respectively.

Regarding the preparation step, the order of components introduced was significantly better when using the software: OR=0.12, 95% CI: 0.04 to 0.35), p<10–^{3}. The labelling was significantly more respected with computerisation: OR=0.22, 95% CI: 0.06 to 0.74, p=0.017.

No impact was detected in the transcription step when using the software with: OR=1.53, 95% CI: 0.53 to 4.42, p=0.424. Likewise, no impact was detected in the administration step with: OR=0.49, 95% CI: 0.04 to 5.58, p=1.

Conclusion The implementation of the prescribing software was beneficial in terms of error management, time and traceability. The computerisation of the process, from the prescription to the administration, is necessary to guarantee security and efficiency in the neonatal intensive care unit. Thus, it is recommended to generalise this pilot experiment in the interests of both prescribers and patients.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

5PSQ-019 SWITCHING FROM INDIVIDUALISED NUTRITION TO STANDARDISED OR COMMERCIALISED NUTRITION IN NEWBORNS: ARE THERE ANY POSSIBILITIES?

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10.1136/ejhpharm-2019-eahpconf.452

Background Newborns often require parenteral nutrition (PN). There are three possibilities from the least secure to the most secure: individualised, standardised and commercialised nutrition. New national guidelines for PN in newborns were published in April 2018.

Purpose To evaluate the substitutability potential of individualised nutrition by standardised or commercialised nutrition in a regional maternity hospital.

Material and methods This was a retrospective chart review of PN in newborns from August 2017 to January 2018. Requirements in the individualised nutrition were compared to the standardised formulations available in our hospital and to the commercialised nutrition adapted in preterm infants. Only glucose and electrolytes concentrations were compared because these are the only elements of our standardised nutrition formulations. Individualised PN were substitutable if the concentrations in standardised or commercialised PN were between −10% and +5% of the prescription. An addition was needed if a concentration was less than −10%. The individualised PN was not substitutable if one or more concentrations were greater than 5%.

Results This study included 2,285 PN prescriptions concerning 263 newborns. There was 1241 individualised PN concerning 130 newborns, including 89% preterm. Medium gestational age was 30 (24; 41) weeks and medium weight was 1462 g (580; 3770). Medium prescription duration was 13 (1–54) days. One-thousand and eleven (81%) individualised nutrition could not be substituted in standardised or commercialised PN because of the inappropriate concentration of glucose or low concentration of electrolytes. None of the individualised nutrition can be substituted without addition. Two-hundred and thirty (19%) individualised nutrition could potentially be replaced: 187 by standardised nutrition and 43 by commercialised nutrition. These standardised or commercialised nutrition bags need, on average, 3.4 adjuncts of electrolytes to maintain the needs of the newborns. Three additions were authorised according to guidelines, so only 108 (9%) individualised nutrition could be substituted.

Conclusion The individualised PN rate of our maternity hospital is in line with the national PN rate. All substitutable individualised PN need some addition but there is no protocol to do that in our hospital. They were then always justified. There are two ways of improvement: use software that suggest the most adapted PN product; or define with the neonatologist which type of addition should be prioritised.

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No conflict of interest.

5PSQ-020 SAFETY EVALUATION OF INJECTABLE POTASSIUM CHLORIDE PRESCRIPTIONS IN HOSPITAL

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10.1136/ejhpharm-2019-eahpconf.453

Background Errors in the administration of injectable potassium chloride (KCl) is part of a list of 12 events described by ANSM (French drug safety agency). These events are called 'Never-Events', which should never occur in hospital if preventive measures are applied.

Purpose We wanted to know the level of safety of our injectable KCl prescriptions using ANSM safety criteria.

Material and methods We carried out a 2 week transversal-retrospective study. Between 1 July and 15 2018 each nominal prescription of injectable KCl was included using our pharmacy validation software (DXCare). All services were included except the ICU and emergencies. Then an intern in the pharmacy processed analyses of the following safety criteria. A double-check was made by a senior pharmacist. The reference guideline used for the safety criteria was the 2017 ANSM recommendations for injectable potassium chloride. For each prescription, recommended ANSM safety criteria related to intravenous KCl were assessed:

- Indication of severe hypokalaemia (<3 mmol/L) or inability to swallow.
- Prescription of KCl using specific units (g or mmol).
- Use of a slow infusion rate (≤1 g/h).
- Use of the available ready–to–use solution.
- Mention of the nature of the dilution solution to be used.