PP269-MON

FACTORS ASSOCIATED WITH VITAMIN D PRESCRIPTION IN PRIMARY HEALTH CARE IN SOUTHERN FRANCE

G. Zeanandin[1], G. Frin[1], X. Hébuterne[1], S.M. Schneider[1]. [1]*Nutritional Support Unit, CHU, Nice, France*

Rationale: Vitamin D (VD) deficiency affects up to 50% of the French population. VD supplementation may exert beneficial effects beyond bone mineralization. However, recent guidelines are missing and in adults Social Security only reimburses prescriptions in cases of osteoporosis and proven VD deficiency. The aim of our study was therefore to assess VD prescription by general practitioners (GP).
Methods: A questionnaire on VD prescription was sent to 1,000 GPs in the Provence Alpes Côte d'Azur and Corsica regions of France. Univariate and multivariate (Wald) analyses allowed to determine factors influencing VD prescription in its approved indications. Anonymized data on reimbursement in 2010 allowed calculation of the cost of VD supplementation in both regions.
Results: 123 GPs (83 M, 40 W, 50±10 y) returned the questionnaire. 79% only prescribed VD in its approved indications, 90% with calcium. 79% measured serum VD levels before supplementation. In univariate analysis, VD prescription in approved indications was influenced ($p < 0.05$) by a GP's age over 54, a practice duration $\geqslant$19 years, VD level measurement and a co-prescription with calcium. In multivariate analysis, factors remaining were a systematic VD level measurement (OR = 4.5; 95% CI = 1.6–13.3; $p = 0.006$) and a co-prescription with calcium (OR = 9.6; 95% CI = 2.4–39.1; $p = 0.002$). The costs of prescription in the two regions (5.2 million inhabitants) were 1.2 M€ for VD alone and 1.8 M€ for VD+calcium, totalling 3 M€. The yearly cost was 514 euros per GP and 11.4 per supplemented patient.
Conclusion: VD prescription leads to a significant expense for the health payers. It matches globally the approved indications. The possible novel indications for prescription, as well as the indications for VD level measurement, may increase significantly this cost. Therefore there is an acute need to establish new guidelines and train GPs to follow these new recommendations.

Disclosure of Interest: None Declared.

PP270-MON

LACK OF SYSTEMATIC MICRONUTRIENT PRESCRIPTION IN PATIENTS RECEIVING PARENTERAL NUTRITION (PN): IMPROVING MANAGEMENT BY PHARMACIST INTERVENTION

J. Potier[1], S. Roy[1], A. Rieutord[1], J.-F. Zazzo[2]. [1]*Pharmacy,* [2]*Nutrition team, Hôpital Antoine-Béclère, Clamart, France*

Rationale: All-in-one parenteral nutrition does not contain micronutrients (MN). Prescriptions orders are not currently adequate inducing MN deficiencies. MN supplementation is mandatory (ESPEN 2009). The aim of the study was to describe PN ordering process and to evaluate the impact of pharmacist advices on the current prescription.
Methods: All prescriptions are ordered via a Computerized Prescriber Order Entry (CPOE). A retrospective survey from January to September 2011 reviewed all PN prescriptions ordered in 4 wards. Were analyzed: duration of PN and date of onset MN supplementation. Then a prospective study has been performed in surgical department from november 2011 to february 2012 after implementation of CPOE daily pharmaceutical interventions.
Results: In the retrospective study, 110 prescriptions (105 patients) were analyzed. The median duration of PN was 18 days (range = 1–73 days). Twenty-five PN were ordered with MN supplementation on the first day of nutrition, 49% of PN were never supplemented. Twenty-two percent of patients were nourished without micronutrients until the 15th day of PN and 20% up to 30 days. In the prospective study 53 prescriptions before and 20 after pharmacist advices were compared. We observed increasing differed MN supplementations with increasing prescription length. In table: evolution of PN without any supplementation according to the prescription length. Pharmaceutical intervention reduces significantly errors.

	Parenteral nutrition duration		
	<15days	15–30 days	>30 days
1st period	57%	22%	14%
2nd period	28%*	0%*	0%

*Significant difference between the two periods ($p < 0.05$).

Conclusion: Inadequate prescription of PN is frequent mainly because of lack of MN supplementation. Implementation of safety measures like CPOE and pharmacist control may have a positive impact on the complicated process of prescribing PN orders.

Disclosure of Interest: None Declared.

PP271-MON

RED WINE EXTRACT INCREASES SUPEROXIDE DISMUTASE ACTIVITY IN THE HEART OF SPONTANEOUSLY HYPERTENSIVE RATS

A. Kondrashov[1], O. Pechaňová[2], R. Ševčík[3]. [1]*First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic;* [2]*Institute of Normal and Pathological Physiology, Slovak Academy of Sciences, Bratislava, Slovakia;* [3]*Faculty of Food and Biochemical Technology, Institute of Chemical Technology, Prague, Czech Republic*

Rationale: The goal of this study was to investigate the effects of red wine extract on superoxide dismutase activity (SOD) in normotensive (WKY) and spontaneously hypertensive (SHR) groups of experimental animals.
Methods: Total antioxidant capacity, phenolic content and selected mineral contents were measured in red wine extract. Young 6-week-old male WKY and SHR rats were treated with Alibernet red wine extract (24.2 mg/kg/day) for 3 weeks. SOD activity and SOD1 protein expression were determined in the blood plasma, heart and aorta.
Results: Antioxidant capacity and phenolic content of red wine extract were 376 mmo/l and 24,172 mg/l of gallic acid equivalents (GAE) respectively.
Among the 9 minerals analyzed potassium and zinc were the most abundant elements. For the SHR group, red wine extract treatment increased SOD activity in the heart by 54% of SHR in comparison with untreated control

hypertensive rats. SOD activity in the plasma and aorta of SHR rats did not change with treatment.
Red wine extract treatment had no significant effect on SOD activity in WKY rats. SOD1 protein expression was not significantly changed by treatment.
Most of the endogenous antioxidant enzymes, which play a key role in the antioxidant defense system, need co-factors, e.g. trace elements, for their proper functions. In addition to high polyphenol content, Alibernet wine extract contains a number of trace elements such as zinc (Zn), which are known as co-factors of the SOD enzyme.
Since AWE treatment did not affect the level of SOD1 protein expression we assume the increase in SOD activity is presumably due to the elevated level of Zn in red wine extract.
Conclusion: In conclusion we suggest some targeted effects of minerals and red wine polyphenols on SOD activity in the heart.

References

[1] Fernandez-Pachon M., Berna G., Otaolaurruchi E., et al. J. Agric. Food Chem. **57**: 6578–6583; 2009.
[2] Rodrigo R., Miranda A., Vergara L. **412**: 410–424; 2011.

Disclosure of Interest: None Declared.

PP272-MON

DOES NOCTURNAL PARENTERAL NUTRITION RESULT IN HYPERGLYCEMIA?

P. Thul[1], V. Müller[1], K. Mielke[1]. [1]*Surgical Department Charité Hospital, Charité Campus Mitte, Berlin, Germany*

Rationale: Typically home parenteral nutrition (HPN) is done over night. The strict observance of the guidelines and manufacturers' information and the necessity to ensure the patients' caloric requirement as well as trace elements and vitamins leads to conflicts, because available time during the night is too short. It is relevant to check if the infusion period can be restricted to the night.
Methods: 837 patients were on HPN for 235,412 days. In order to adapt HPN to the requirements of the patients, laboratory examinations were done every 2 months. Patients' energy needs were measured by indirect calorimetry. The infusion periods of the patients were inquired in a personal interview. Blood glucose and HbA1c were measured in the morning.
Results: The infusion periods take 12±2 hours, median 12 hours. 2985 laboratory data are available for the analysis of blood glucose level. The blood glucose reveals a mean value of 102 mg/dl, the median is 96 mg/dl.
In 158 measurements HbA1c and simultaneously blood glucose were checked. The median of HbA1c is 5.4%, the mean is 5.44% (ref. 4.3–6.1%). The blood glucose values of the patients conform with 95.8±34.6 mg/dl (5.3±1.88 mmol/L) to the norm.
Conclusion: The analysis of the blood glucose levels of the patients on HPN does not imply disadvantages when glucose infusion periods differ from the manufacturer's information. It is ambiguous for what reason patients' quality of life should be restricted by inordinate long infusion times.

Disclosure of Interest: None Declared.

PP273-MON

NORMOCALCAEMIA AND NORMOPHOSPHATAEMIA ON HPN IN SPITE OF INCREASED PARATHORMONE LEVEL

P. Thul[1], K. Mielke[1], V. Müller[1]. [1]*Surgical Department Charité Hospital, Charité Campus Mitte, Berlin, Germany*

Rationale: According to ESPEN guidelines patients on long-term home parenteral nutrition (HPN) receive a vitamin preparation with a fixed combination of all vitamins. Bone disease and renal stones are regarded as major problems of long-term HPN.
Methods: 807 patients provide 3139 laboratory data which cover the timespan from 1994 till August 2011. In order to adapt HPN to the requirements of the patients, laboratory examinations were done every 2 months.
Results: The data record contains 2640 parathormone (PTH) values. 1050 values (39.8%) exceed the reference range of 65 ng/l. The mean value of the increased PTH levels of the patients is 124.4±84.5 ng/l. Mean calcium of patients with elevated PTH is 2.23±0.15 mmol/l. Mean phosphorus is 1.08±0.24 mmol/l.
Mean vitamin D25 of the patients with elevated PTH is 35.23±22.4 nmol/l which is quite lower than the vitamin D25 mean value of all patients (40.14±26.4 nmol/l). By contrast the corresponding 982 vitamin D1,25 values show a mean of 81.64±46.65 pmol/l. This mean value is higher than the mean of the vitamin D1,25 values of all patients (74.6±49.1 pmol/l).
Conclusion: The analysis depicts that patients' calcium and phosphorus levels conform to the norm, although 39.8% of the PTH values exceed the reference range. Probably the increased PTH level boosts the conversion of vitamin D25 to vitamin D1,25 in the kidney, therefore the vitamin D25 level of the patients with high PTH is decreased. The risk of bone fractures was still low and only 4 patients suffered from kidney stones, because they received extra supply of vitamin D by family doctor.

Disclosure of Interest: None Declared.

PP274-MON

VITAMIN D LEVEL IN HPN PATIENTS CONSIDERING SEASONAL VARIATIONS

K. Mielke[1], V. Müller[1], P. Thul[1]. [1]*Surgical Department Charité Hospital, Charité Campus Mitte, Berlin, Germany*

Rationale: Patients on long-term home parenteral nutrition (HPN) receive a vitamin preparation with a fixed combination according to ESPEN guidelines. It can be expected that patients' vitamin D level shows higher values in summer months than in winter months, because intensified UV-B radiation in summer stimulates vitamin D synthesis in the body. It is necessary to validate the hypothesis and to check whether the vitamin preparation leads to an overdose of vitamin D in summer months.
Methods: 807 patients with HPN were treated since 1994 in the Surgical Department of Charité University hospital Berlin. By now 3139 vitamin D values are achieved. In order to adapt HPN to the requirements of the patients, laboratory examinations were done every 2 months. Vitamin D values measured in May, June, July and August get analysed and compared with vitamin D values measured in November, December, January and February.