



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Conclusions

Hypovitaminosis D is common among snoring children. Family patterns of vitamin D could be helpful for the early identification of children at risk of metabolic and sleep disturbances, also when considering strategies to improve vitamin D status.

doi: 10.1016/j.cca.2022.04.938

W181

Evaluation of the interchangeability of blood collection tubes for the measurement of trace elements

J.A. Delgado Rodríguez, F. Forteza Ferrer, S. Gutiérrez Sánchez, J. Robles Bauza, J.M. Bauça

Department of Laboratory Medicine, Hospital Universitari Son Espases, Palma de Mallorca, Spain

Background-aim

In the light of the tiny proportions of trace elements in the human body, potential contamination sources need to be carefully minimized and prevented, both in the preanalytical and in the analytical phase.

Our objective was to estimate the degree of interference associated with the separating gel and metal probes used in autoanalyzers in the determination of trace elements in serum.

Methods

Thirty individuals referring to our laboratory were selected and, after signing the informed consent, two blood tubes were collected from each of them: normal serum tube (with separating gel, used for general biochemistry tests) and a trace element-specific tube (acid-washed) (Vacutainer, BD).

Copper, selenium and zinc were quantified in the normal serum tube after the performance of biochemistry tests and also in the trace element-specific tube.

Trace element testing was performed on the inductively coupled plasma-mass spectrometer NexION 300X (PerkinElmer) using germanium as internal standard, and calibrated by standard addition.

Mean difference was calculated between paired data (bias,%). Trace element-specific tube was taken as reference. The maximum allowable biases (MAB) were 5.4%, 4.61% and 3.31% for Cu, Se and Zn, respectively, according to our quality specifications.

Analytically significant interferences were considered if calculated bias was greater than MAB.

Results

Result intervals were 816.2–1856.8 µg/L for copper, 62.0–110.1 µg/L for selenium and 545.0–1050.6 µg/L for zinc, covering the clinically relevant range.

The bias associated with the use of the normal serum tube (with separating gel and after introduction of metal probe) was 2.58% for copper, 3.33% for selenium and 14.16% for zinc.

The calculated bias for zinc exceeded MAB, according to the specifications in our laboratory.

Conclusions

Since the interference is not analytically significant for copper and selenium, both serum tubes are interchangeable for their testing. However, the error found in the measurement of zinc advises against the use of the normal serum tube with separating gel.

Although this observation about zinc has already been suggested elsewhere, we interestingly found that the normal serum tube may be used as alternative in the case of copper and selenium when the trace element-specific tube is missing, grossly hemolyzed or sample is insufficient.

doi: 10.1016/j.cca.2022.04.939

W182

Association between nutritional and inflammatory biomarkers in COVID-19 patients with chronic kidney disease

V. Khurana, B. Goswami, S. Kaushik

Department of biochemistry, Maulana azad medical college, New Delhi, India

Background-aim

The world witnessed the emergence of a new disease, COVID-19 caused by SARS-CoV-2 which is now a global pandemic. This proinflammatory disease, establishes a scenario of an acute on chronic condition on the already nutritionally and immunologically compromised CKD patients. Much has been speculated on the possible link between nutrient status and COVID-19 mortality. The aim of our study was to assess the association between nutritional and inflammatory biomarkers in these patients in the Indian population.

Methods

A prospective, cross sectional study was performed on 100 adult known cases of CKD, who were recently diagnosed as COVID-19 positive by rRT-PCR in a designated tertiary-care hospital in India. On the day of admission prior to initiation of any treatment, the serum levels of nutritional and inflammatory biomarkers of the subjects were measured and analysed.

Results

High serum levels of inflammatory biomarkers – IL6 and hsCRP, and low serum levels of nutritional biomarkers – Albumin and Cholesterol, with Prealbumin levels near the lower limit of the normal reference range were found in the study population. A significant negative correlation between inflammatory biomarker IL6 and nutritional biomarkers Vitamin C ($r = -0.21$, $p = 0.03^*$) and Prealbumin ($r = -0.30$, $p = 0.00^*$), and between inflammatory biomarker hsCRP and nutritional biomarkers Albumin ($r = -0.21$, $p = 0.03^*$), Zinc ($r = -0.24$, $p = 0.01^*$) and Folate ($r = -0.20$, $p = 0.04^*$) was noted.

Conclusions

Since a negative association was found between some of the measured nutritional and inflammatory biomarkers, it is suggested that achieving a good nutritional status might indirectly, slow down the pro-

gression of both CKD and COVID-19 and thus aid in better management and prognosis of both. There is thus a need to reassess the nutrition regimens of patients with kidney diseases in the midst of COVID-19.

doi: 10.1016/j.cca.2022.04.940

W183

Dosage of vitamin D2 and D3 by HPLC in the population of eastern Morocco

E. Sebbar, I. Elmezzgueldi, B. Mouhoub, O. Nassiri, A. Amrani, S. Farih, A. Idrissi, S. Belmahi, M. Choukri

Faculty of Medicine and Pharmacy of Oujda

Background-aim

The objective of our study was to determine the vitamin D status in the population of Eastern Morocco.

Methods

We recruited 419 patients (240 women and 179 men) from different localities of Eastern Morocco. Serum determination was performed by high performance liquid chromatography (HPLC) separative method which allows the determination of vitamin D2 and D3.

Results

In our work the mean level of total vitamin D was 18.66 ng/ml. 21.66 ng/ml for men and 16.78 ng/mL for women. For vitamin D3, the mean level was 18.17 ng/ml. 21.48 ng/ml for men and 16.21 ng/mL for women. For vitamin D2, the mean level was 0.5 ng/ml, we note that 82.58% of the participants had undetectable serum levels of vitamin D2. Analysis of vitamin D status by geographic distribution found that all provinces in the Oriental region had high prevalences of hypovitaminosis D.

Conclusions

In our study, the prevalence of hypovitaminosis D in the population of the Oriental region was very high, in the different provinces, and affected both sexes and different age groups. This result indicates the fact that even in a region like ours, which benefits from a strong sunshine all year round and during the summer season, the prevalence of hypovitaminosis D is very high, and even “endemic” in the general population.

doi: 10.1016/j.cca.2022.04.941
