Upcoming Educational Events

2011 AACC Annual Meeting
- Abstracts
- Annual Meeting Blog
- Annual Meeting Photos
- Clinical Lab Expo
- Exhibitors

2012 AACC Annual Meeting

Annual Meeting Dates & Locations

Expert Access

Online Education

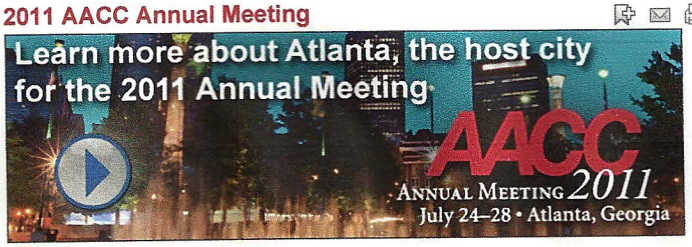
Meetings Abstracts

Meeting Proceedings

Travel Grants

Visas and Invitation Letters

2011 AACC Annual Meeting



Thanks for joining us in Atlanta. We look forward to seeing you next year, July 15 – 19, 2012 in Los Angeles. For more information on the 2012 meeting, click here.

Missed a Session At Annual Meeting?

If you would like to purchase or download a recording of one or more sessions from a previous Annual Meeting, click here.

Thanks to all the 2011 Annual Meeting Organizing Committee

We would like to thank the **2011 Annual Meeting Organizing Committee** for their hard work in putting together the 2011 Annual Meeting in Atlanta. Thanks for a terrific meeting.

Thanks to all those who Exhibited and Supported the Annual Meeting- we couldn't have done it without you!

Certified by

U.S. COMMERCIAL SERVICE
United States of America
Department of Commerce

AACC Pathfinder

Obtain Your Continuing Education Credit

1850 K Street, NW Suite 625
Washington, DC 20006
Phone: (800) 892-1400 | Fax: (202) 887-5093

introduced into the ICP-MS *via* a membrane desolvator to minimize oxide formation. Results were calculated using the $^{111}Cd/^{112}Cd$, $^{111}Cd/^{113}Cd$ and $^{111}Cd/^{114}Cd$ intensity ratios after correction for residual spectral inference from Mo and Sn. SRM 966, Toxic Elements in Bovine Blood was used for method validation.

Clinical Procedures - Single, blinded vials of each level of SRM 955c were distributed for analysis "as special" PT samples. Samples were analyzed in the same manner as routine patient specimens. A sub-set of the reported data, composed of results from a group of 22 experienced reference laboratories using ICP-MS (18), graphite furnace atomic absorption spectrometry (3) and atomic absorption spectrometry (1), were used for comparison to ID ICP-MS data.

Results: PT data are within -0.9 %, -3.3%, and -4.0 % of ID ICP-MS data for Cd in SRM 955c Level 2 (2.16 µg/L), Level 3 (5.20 µg/L), and Level 4 (10.26 µg/L), respectively. The approximate 95% confidence intervals for the difference between the means show no evidence of disagreement for Level 2, however small but statistically significant differences are revealed for Levels 3 and 4. Comparison of ID ICP-MS results for unseparated and separated sample fractions illustrate the adverse effect of blood matrix on the precision and accuracy of Cd measurements. CV's were 1.0 % for unseparated and 0.3 % for separated Cd Level 4 sample fractions (n=8) and means differed by +2.5 %. Matrix-induced signal suppression resulted in a 50 % decrease in signal intensity for unseparated samples.

Conclusion: It is possible that the small differences observed in the PT data and ID ICP-MS data are due to differing sample treatments. Matrix separation, used in the ID ICP-MS analyses was shown to improve accuracy and precision by reducing the effects of spectral and non-spectral interference. Reference values for Cd in Level 2 and Level 4 currently reported on the Certificate of Analysis for SRM 955c will be updated to reflect the additional ID ICP-MS data.

B-137

Evaluation of trace elements and biochemical parameters in blood samples from a healthy elderly population in a university hospital in Brazil

N. M. Sumita[1], M. E. Mendes[2], O. Jaluul[3], W. Jacob Filho[3], M. Saiki[4]. *[1]Central Laboratory Division & Laboratories of Medical Investigation (LIM-03) of Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP) and Fleury Medicina e Sáude, São Paulo, Brazil, [2]Central Laboratory Division & Laboratories of Medical Investigation (LIM-03) of Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP), São Paulo, Brazil, [3]Clinical Geriatric Discipline of Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP), São Paulo, Brazil, [4]Instituto de Pesquisas Energéticas e Nucleares (IPEN), Neutron Activation Analysis Laboratory, São Paulo, Brazil,*

Background: There are few data about reference values to be used in laboratory tests for elderly. This fact encouraged us to evaluate some biochemical parameters and trace elements concentrations present in blood samples from ambulatory elderly people.

Methods: This study was submitted and approved by our Internal Review Board (IRB). An elderly population, without clinical evidence of serious chronic diseases, from Clinical Hospital of São Paulo University Medical School was evaluated. The selection of these individuals was based on the SENIEUR protocol (*SENIor EURopean Protocol*). The blood samples of 125 elderly people (36 men and 89 women), aging 72 ± 8 years, were analyzed. The blood, after 12 hours fast, was collected by venipuncture using sterile standard metallic needles. It was collected in two types of evacuated tubes (Vacutainer Systems - Becton Dickinson, EUA): SST II *Advance* gel and clot activator tube and a specific tube for trace elements analysis, without heparin. An aliquot of serum (3.0 mL) was transferred to a flask (Nalgene) and freeze-dried for trace element determinations. Neutron activation analysis (NAA) was applied for trace elements determination. About 150 mg of freeze-dried serum were irradiated at the IEA-R1 research nuclear reactor together with elemental standards. Short and long irradiations were carried out under a thermal neutron flux of about 4 x 10^{12} n cm^{-2} $s^{-1}$for Br, Ca, Cl, Fe, Na, Rb, Se and Zn determinations. After adequate decay times, the irradiated samples and standards were measured using a Hyperpure Ge detector Model GX2020 coupled a gamma-ray spectrometer. The radioisotopes measured were identified according to their half-lives and gamma-ray energies and the element concentrations were calculated by comparative method. The certified reference material, NIST 1566b Oyster Tissue was analyzed to evaluate the accuracy and precision of the results.

Results: The mean concentration values obtained by NAA were: Br: 3.45± 0.84 mg/L, Ca: 9.58 ± 0.94 mg/dL, Cl: 89.19 ± 8.67 Meq/L, Fe: 132.4 ± 109.5 µg/L, Na: 133.3±12.5 Meq/L, Rb: 321.0± 57.8 µg/L, Se: 76.7 ± 25.0 µg/L and Zn 96.2 ± 14.5 µg/L. Biochemical analyses were carried out on Roche/Hitachi MODULAR *ANALYTICS* PP (Roche Diagnostics GmbH, Mannheim, Germany), using specific kits from Roche Diagnostics, too. The biochemical mean values obtained were: uric acid: 5.0±1.4 mg/dL, total bilirrubin:0.72±0.29 mg/dL, Na:141±3 mEq/L, K:4.5±0.4 mEq/L, Ca:9.4±1.1 mg/dL, ionized Ca:5.1±0.5 mg/dL, P: 3.5±0.5 mg/dL, Mg:2.09±0.28 mg/dL, glucose:93±10 mg/dL, urea:37±12 mg/dL, creatinine:0.84±0.19 mg/dL, Fe:105±32 µg/dL, total iron-binding capacity:304±41 µg/dL, ferritin:178±154 ng/mL, total protein:7.4±0.5 g/dL, albumin:4.4±0.3 g/dL, total cholesterol:210±36 mg/dL, HDL-cholesterol 59±14 mg/dL, LDL-cholesterol:128±32 mg/dL, triglycerides:121±60 mg/dL, AST:22±7 U/L, ALT:20±11 U/L, alkaline phosphatase:79± 25U/L and GGT:25±29 U/L.

Conclusion: It can be concluded that the blood sera from this healthy elderly group do not present deficiency or excess of trace elements. The results of biochemical parameters suggest the need to establish specific reference values for elderly.

B-138

Hepcidin and ferritin in hemodialyzed patients

J. Racek[1], T. Sedláčková[1], J. Eiselt[1], L. Malánová[2], L. Trefil[3], D. Rajdl[1]. *[1]Charles University, Faculty of Medicine, Pilsen, Czech Republic, [2]B. Braun Avitum, Pilsen, Czech Republic, [3]Faculty Hospital, Pilsen, Czech Republic,*

Background: Hepcidin is a key systemic regulator of iron metabolism. Hepcidin binds to the iron cell exporter ferroportin so iron is kept in the cells unavailable for erythropoiesis. Hepcidin synthesis is up-regulated by high iron stores and inflammation. Dialyzed patients have very often impaired iron management - they suffer from anemia, which is caused by many factors including the state of microinflammation and hepcidin retention due to decreased glomerular filtration rate. Our aim was to describe the relationship of hepcidin and other parameters of iron metabolism, erythropoiesis and inflammation in these patients.

Methods: Complete blood cell count, iron, ferritin, trasferrin, CRP, albumin, creatinine, hepcidin (ELISA kit from DRG Diagnostics), soluble transferrin receptors (sTfR) and IL-6 were measured in samples from 164 patients treated in chronic hemodialysis program at the Ist Department of Internal Medicine, Faculty Hospital in Pilsen (age 66±13, 25-92 years), 63 women and 101 men and 37 control healthy volunteers (age 55±20, 21-92 years), 21 women and 16 men.

Results: Iron, transferrin and hemoglobin were significantly lower in the patients group ($p<0.0001$) while ferritin ($p<0.0001$), sTfR ($p<0.05$), hepcidin ($p=0.0003$), CRP and IL-6 ($p<0.0001$) were significantly higher in the patients group. Hepcidin weakly ($p<0,05$) positively correlated with CRP and ferritin and weakly negatively correlated with transferrin ($p<0,05$) in hemodialyzed patients. No correlation of hepcidin with other biochemical parameters in controls was shown.

Conclusion: Parameters of iron metabolism, erythropoiesis and inflammation were significantly different between hemodialyzed patients and a control group. Only weak correlation between hepcidin and ferritin and CRP and no correlation with IL-6 in hemodialyzed patients can indicate that the influence of inflammation as a factor causing increased hepcidin levels in hemodialyzed patients is not crucial and other factors including its retention in end-stage renal disease can concur.

The study was supported by research project No MSM 0021620819.

B-139

Modified Method for the Simultaneous Measurement of Retinol, α-Tocopherol, and β-Carotene in Human Serum

Y. Berman, S. Galvez, J. Piscitelli. *Quest Diagnostics, Teterboro, NJ,*

Background: Vitamin A (retinol), Vitamin E (tocopherol), and carotene play an important role in human health. Vitamin A is necessary for normal vision, cellular differentiation, growth and reproduction. Vitamin E is known for its antioxidant properties and promoting immunity. β-Carotene possesses provitamin A activity and may have a protective effect in prevention of diseases such as cancer and cardiovascular disease. Existing methods employ a lengthy protocol for sample preparation and separation by high-performance liquid chromatography (HPLC). We developed and validated a simple, sensitive, and fast isocratic HPLC method for simultaneous quantification of these vitamins in human serum.

Methods: The developed method uses (1) liquid-liquid extraction followed by freezing with the removal of organic phase by decantation and (2) isocratic gradient with a short, small particle size C-18 column coupled with ultraviolet-visible detection for quantification.