

## Cuban Research in Current International Journals

The following selection—alphabetical by title—reflects Cuban medical publishing in international journals over the last quarter on an array of topics. Links to these journal articles may be found at [www.medicc.org/mediccreview](http://www.medicc.org/mediccreview).

**Construction of a Recombinant Non-Mitogenic Anti-Human CD3 Antibody.** Hinojosa LE, Hernández T, de Acosta CM, Montero E, Pérez R, López-Requena A. *Hybridoma (Larchmt)*. 2010 Apr;29(2):115–24.

IOR-T3, a mouse monoclonal antibody specific for human CD3, has been successfully used in the treatment of acute transplant rejection due to its potential as T-cell immunosuppressant. In the present work we report the construction of a human IgG1 chimeric variant of IOR-T3, named T3q. In order to reduce the T-cell activating capacity of the newly obtained chimeric molecule, the two leucine residues at positions 234 and 235 of the CH2 region were replaced by alanines, obtaining the T3q(Ala/Ala) molecule. *In vitro* evaluation of T3q and T3q(Ala/Ala) showed that there were no differences in the recognition of human CD3 in comparison with murine IOR-T3. However, the Fc-mutated version T3q(Ala/Ala) displayed a much weaker FcγR binding capacity than the unmutated chimeric molecule T3q, as well as a reduced ability to induce T-cell proliferation, proinflammatory cytokine release (TNFα and IL-6), and early activation surface marker expression (CD25 and CD69). We also found that, unlike treatment with T3q, the reduction in T-cell proliferation was less marked on CD8<sup>+</sup> cells compared to the CD4<sup>+</sup> cells after treatment with T3q(Ala/Ala). These properties make T3q(Ala/Ala) an attractive clinical alternative as an immunoregulatory agent endowed with reduced toxicity.

**Designing novel antitrypanosomal agents from a mixed graph-theoretical substructural approach.** Planche AS, Scotti MT, Emerenciano V de P, López AG, Pérez EM, Uriarte E. *J Comput Chem*. 2010 Mar;31(4):882–94.

Chagas disease is nowadays the most serious parasitic health problem. This disease is caused by *Trypanosoma cruzi*. The great number of deaths and the insufficient effectiveness of drugs against this parasite have alarmed the scientific community worldwide. In an attempt to overcome this problem, a model for the design and prediction of new antitrypanosomal agents was obtained. This used a mixed approach, containing simple descriptors based on fragments and topological substructural molecular design descriptors. A data set was made up of 188 compounds, 99 of them characterized an antitrypanosomal activity and 88 compounds that belong to other pharmaceutical categories. The model showed sensitivity, specificity and accuracy values above 85%. Quantitative fragmental contributions were also calculated.

Then, and to confirm the quality of the model, 15 structures of molecules tested as antitrypanosomal compounds (that we did not include in this study) were predicted, taking into account the information on the abovementioned calculated fragmental contributions. The model showed an accuracy of 100% which means that the “in silico” methodology developed by our team is promising for the rational design of new antitrypanosomal drugs.

**Differentiation of *Leishmania (Viannia) panamensis* and *Leishmania (V.) guyanensis* using *Bccl* for *hsp70* PCR-RFLP.** Montalvo Álvarez AM, Nodarse JF, Goodridge IM, Fidalgo LM, Marín M, Van Der Auwera G, et al. *Trans R Soc Trop Med Hyg*. 2010 May;104(5):364–7.

*Leishmania panamensis* and *Leishmania guyanensis* are two species of the subgenus *Viannia* that are genetically very similar. Both parasites are usually associated with cutaneous leishmaniasis, but also have the potential to cause the mucocutaneous form of the disease. In addition, the study of foci and consequently the identification of vectors and probable reservoirs involved in transmission require a correct differentiation between both species, which is important at epidemiological level. We explored the possibility of identifying these species by using restriction fragment length polymorphisms (RFLP) in the gene coding for heat-shock protein 70 (*hsp70*). Previously, an *hsp70* PCR-RFLP assay proved to be very effective in differentiating other *Leishmania* species when *HaeIII* is used as restriction enzyme. Based on *hsp70* sequences analysis, *Bccl* was found to generate species-specific fragments that can easily be recognized by agarose gel electrophoresis. Using the analysis of biopsies, scrapings, and parasite isolates previously grouped in a cluster comprising both *L. panamensis* and *L. guyanensis*, we showed that our approach allowed differentiation of both entities. This offers the possibility not only for identification of parasites in biological samples, but also to apply molecular epidemiology in certain countries of the New World, where several *Leishmania* species could coexist.

**Effect of ozone/oxygen mixture on systemic oxidative stress and organic damage.** Guancho D, Zamora Z, Hernández F, Mena K, Alonso Y, Roda M, et al. *Toxicol Mech Methods*. 2010 Jan;20(1):25–30.

Ozone is a molecule of high energetic content. Its great oxidative power has been used in

medicine for the treatment of several illnesses with a wide spectrum. The rectal insufflation with a mixture of ozone/oxygen is considered as a simple therapy, not painful, of low cost and practically free from adverse effects. Given its potential oxidation and lack of side-effects, the objective has been to know the state of different indexes of redox state in blood which may contribute to understanding the mechanism by which mixtures of ozone/oxygen administered by intrarectal route are able to exert actions on other organs. With this purpose female rabbits were used, distributed into four groups, and three doses of ozone/oxygen mixture were tested. When treatment was finished, the determination of pro-oxidant and antioxidant markers was carried out. Also indexes of organic damage were determined. Ozone doses administered to rabbits did not cause adverse effects and mortality did not show significant changes relative to tissue damages and they increased enzymes activities belonging to the first line antioxidant defences. The results demonstrate that ozone/oxygen mixture administered by rectal insufflations is innocuous and it is able to increase the antioxidant defense of the organism.

**Episodes of Overtreatment during the First Six Months in Children with Congenital Hypothyroidism and Their Relationships with Sustained Attention and Inhibitory Control at School Age.** Álvarez M, Iglesias Fernández C, Rodríguez Sánchez A, Dulin Íñiguez E, Rodríguez Arnao MD. *Horm Res Paediatr*. 2010 Apr 16. [Epub ahead of print]

**Background/Aims** Contradictory results regarding the optimal initial dose of levothyroxine in children with congenital hypothyroidism (CH) hamper the clinical management of these children during their early infancy. We explore the relationships between the initial dose of levothyroxine and endocrine control during the first 6 months and cognition at school age. **Subjects and Methods** Fifty children with CH, 14 boys (10 ± 3.1 years) and 36 girls (9.7 ± 2.6 years), at the Pediatric Endocrine Unit of the Hospital Gregorio Marañón in Madrid were studied. Neurocognitive evaluation was carried out exploring alertness and inhibitory control. The number of episodes of overtreatment during the first 6 months, the initial dose of levothyroxine, etiology and sex were the predictor variables. **Results** Inhibitory control was significantly lower in children with CH than in controls. An interaction with gender and etiology was obtained. Alertness had an inverse relationship with the number of episodes of overtreatment with no

interaction with gender or etiology. **Conclusion** Episodes of overtreatment and not the initial dose of levothyroxine are a risk factor for deficit in alertness whereas subtle inhibitory control deficit seems to be a permanent problem with the current therapeutic approach.

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**Evolution of disease mortality burden in Cuba: 1990–2005.** Seuc AH, Domínguez E. *Cad Saude Publica.* 2010 Mar;26(3):615–23.

The objective of this study was to estimate the evolution of the burden of disease in Cuba for 20 major causes at five year intervals from 1990 to 2005, in terms of mortality and years of life lost due to premature death (YLL), using national mortality registries. Six summary measures were computed for each of the 20 major causes of death which characterized the evolution of the disease burden over the period studied. The 20 causes were then grouped according to their behaviour in these summary measures; hierarchical cluster analysis was used to support this grouping process. We compute YLL results with and without age-weighting and time discounting (3%). The 20 major causes were grouped into 12 subgroups, each with a particular pattern. The burden of disease in Cuba during the period 1990–2005 has a peculiar pattern that does not reproduce the one characteristic of other low- and middle-income countries. The approach used in this study supports a better description of mortality and YLL trends for major causes, for identifying possible explanations, and for supporting public health policy making. It seems convenient to reproduce this analysis using shorter time intervals, e.g. annually.

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***Helicobacter pylori cagA* and *vacA* genotypes in Cuban and Venezuelan populations.** Ortiz-Princz D, Guariglia-Oropeza V, Ávila M, Correnti M, Perone M, Gutierrez B, et al. *Mem Inst Oswaldo Cruz, Rio de Janeiro.* May 2010;105(3):331–5.

The aim of this study was to determine the presence of *Helicobacter pylori* cytotoxin-associated gene (*cagA*)/vacuolating cytotoxin gene (*vacA*) among patients with chronic gastritis in Cuba and Venezuela. Gastric antrum biopsies were taken for culture, DNA extraction and PCR analysis. Amplification of *vacA* and *cagA* segments was performed using two regions of *cagA*: 349 bp were amplified with the F1/B1 primers and the remaining 335 bp were amplified with the B7629/B7628 primers. The VA1-F/VA1-R set of primers was used to amplify the 259-bp (s1) or 286-bp (s2) product and the VAG-R/VAG-F set of primers was used to amplify the 567-bp (m1) or 642-bp (m2) regions of *vacA*. *cagA* was detected in 87% of the antral samples from Cuban patients and 80.3% of those from Venezuelan patients. All possible combinations of *vacA* regions were found, with the exception of s2/m1. The predominant combination found in both countries was s1/m1. The percentage of *cagA*<sup>+</sup>

strains was increased by the use of a second set of primers and a greater number of strains was amplified with the B7629/B7628 primers in the Cuban patients ( $p = 0.0001$ ). There was no significant difference between the presence of the allelic variants of *vacA* and *cagA* in both populations. The predominant genotype was *cagA*+/s1m1 in both countries. The results support the necessary investigation of isolates circulating among the human population in each region.

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**Innovative evaluation of visual field defects in epileptic patients after standard anterior temporal lobectomy, using partial field visual evoked potentials.** Báez Martín MM, Téllez YD, Chacón LM, Díaz BE, Trápaga-Quincoses O, Maeso IG, et al. *Epilepsy Res.* 2010 Jun;90(1–2):68–74.

The purpose of this paper is to obtain an electrophysiological evaluation of visual field defects consecutive to the direct lesion of optic radiations in drug-resistant epileptic patients after a standard electrocorticographically adjusted lobectomy, and to correlate it with conventional perimetric results, and with the volume of resected tissue during surgical treatment. Twenty-four patients with temporal lobe epilepsy defined through long term EEG-video, ictal and interictal SPECT, as well as Magnetic Resonance Imaging were studied. Visual evoked potentials (VEPs) with partial and total visual field stimulation were carried out before and after 6, 12 and 24 months surgical treatment. A control group was also studied. No differences between patients and control subjects were observed during the evaluation of the full-field VEPs. However, there were statistical differences between groups in the half-field VEP recordings and in the VEP recordings of contralateral to resected side superior quadrant (CSQ) before lobectomy and 6 months later (Mann-Whitney's U-test,  $p < 0.05$ ). Significant associations were found between VEP abnormalities and perimetric results in CSQ. A close relationship between perimetry, VEPs and volume of the resected tissue in hippocampus, parahippocampus, medial and lower temporal giri was also found. Visual field defects consecutive to standard temporal lobe resection in epileptic patients could be objectively evaluated by partial stimulation VEPs corresponding to the size of resected tissue.

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**Measuring disability across cultures - the psychometric properties of the WHODAS II in older people from seven low- and middle-income countries. The 10/66 Dementia Research Group population-based survey.** Sousa RM, Dewey ME, Acosta D, Jotheeswaran AT, Castro-Costa E, Ferri CP, et al. *Int J Methods Psychiatr Res.* 2010 Mar;19(1):1–17.

We evaluated the psychometric properties of the 12-item interviewer-administered screener version of the World Health Organization Disability Assessment Schedule – version II

(WHODAS II) among older people living in seven low- and middle-income countries. Principal component analysis (PCA), confirmatory factor analysis (CFA) and Mokken analyses were carried out to test for unidimensionality, hierarchical structure, and measurement invariance across 10/66 Dementia Research Group sites. PCA generated a one-factor solution in most sites. In CFA, the two-factor solution generated in Dominican Republic fitted better for all sites other than rural China. The two factors were not easily interpretable, and may have been an artefact of differing item difficulties. Strong internal consistency and high factor loadings for the one-factor solution supported unidimensionality. Furthermore, the WHODAS II was found to be a 'strong' Mokken scale. Measurement invariance was supported by the similarity of factor loadings across sites, and by the high between-site correlations in item difficulties. The Mokken results strongly support that the WHODAS II 12-item screener is a unidimensional and hierarchical scale confirming to item response theory (IRT) principles, at least at the monotone homogeneity model level. More work is needed to assess the generalizability of our findings to different populations.

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**Network analysis as a tool to assess the intersectoral management of health determinants at the local level: A report from an exploratory study of two Cuban municipalities.** Pagliccia N, Spiegel J, Alegret M, Bonet M, Martínez B, Yassi A. *Soc Sci Med.* 2010 Jul;71(2):394–9.

Intersectoral action on health determinants has long been recognized as an important factor in achieving better population health. Nevertheless, there is no process that provides empirical evidence to policy-makers on the extent of intersectoral collaboration. We aimed to fill this gap by conducting case studies in two municipalities in Cuba, a country well known for its intersectoral practice and good health outcomes. We surveyed an intentional sample of key members of Health Councils—virtual intersectoral spaces in Cuba—about links and related actions they had with other sectors on eleven health determinants. Using network analysis we were able to produce measures to evaluate and characterize the network of sectors. Findings show that the two municipalities were similar in reported importance of health determinants, extent of long-term engagement in intra-sectors actions and level of collaboration with other sectors for virtually all determinants. Municipalities also showed similar overall levels of collaboration for most determinants when considered as a network of different sectors (network density). However municipalities showed differences in the central role played by some sectors (centrality index). We further used the network analysis blockmodeling technique to typify the municipal Health Councils. We found that while one Health Council can be typified by a single well connected

network structure, the other has two distinct structures with more sparse connections. We conclude that intersectoral collaboration can be assessed by the use of network analysis measurements. This approach is novel and provides evidence to decision-makers about their role and their effort towards collaboration in achieving better health outcomes.

**Nimotuzumab plus radiotherapy for unresectable squamous-cell carcinoma of the head and neck.** Rodríguez MO, Rivero TC, del Castillo Bahi R, Muchuli CR, Bilbao MA, Vinageras EN, et al. *Cancer Biol Ther.* 2010 Mar;9(5):343–9.

The prognosis of patients with advanced head and neck cancer remain dismal. For this tumor type, elevated levels of EGFR are associated with a shorter disease free survival and time to treatment failure, reflecting a more aggressive phenotype. Nimotuzumab is a humanized monoclonal antibody that recognizes domain III of the extracellular region of the EGFR, within an area that overlaps with both the surface patch recognized by cetuximab and the binding site for EGF. In order to assess the efficacy of nimotuzumab in combination with radiotherapy, a controlled, double blind, randomized clinical trial was conducted in 106 advanced squamous cell carcinoma of the head and neck patients, mostly, unfit for chemoradiotherapy. Control patients received a placebo and radiotherapy. Treatment was safe and the most frequent adverse events consisted on grade I or II asthenia, fever, headache and chills. No skin rash was detected. A significant complete response rate improvement was found in the group of patients treated with nimotuzumab as compared to the placebo. In the intent to treat analysis, a trend towards survival benefit for nimotuzumab treated subjects was found. The survival benefit became significant when applying the Harrington-Fleming test, a weighted log-rank that underscores the detection of differences deferred on time. In addition, a preliminary biomarker investigation showed a significant survival improvement for nimotuzumab treated patients as compared to controls for subjects with EGFR positive tumors. All patients showed a quality of life improvement and a reduction of the general and specific symptoms of the disease.

**Perceptual/attentional anomalies in schizophrenia: A family study.** Martín-Reyes M, Mendoza Quiñones R, Díaz de Villalvilla T, Valdés Sosa M. *Psychiatry Res.* 2010 Apr 30;176(2–3):137–42.

Endophenotypes have emerged as an important concept in the study of schizophrenia. Perceptual/attentional anomalies were examined as potential endophenotypes in a family study using a strategy for “multiplex/simplex schizo-

phrenia”. The sample was comprised of 797 subjects: 206 schizophrenia patients, 302 first-degree relatives and 289 controls. The Spanish versions of the Structured Interview for Assessing Perceptual/attentional Anomalies (SIAPA) and Positive and Negative Symptoms Scale (PANSS) were applied to measure the presence of perceptual/attentional anomalies, and positive and negative subscale respectively. An ANCOVA was carried out for global comparisons between groups. The multiplex schizophrenic group had significantly more frequent auditory and visual perceptual/attentional anomalies than Simplex schizophrenic and control groups. The most interesting finding was that the severity of auditory and visual perceptual/attentional anomalies and negative symptoms was significantly higher in the relatives of the multiplex schizophrenia group than in those relatives from the simplex schizophrenia and control groups. The existence of perceptual/attentional anomalies in nonaffected relatives suggests the presence of familial association for these symptoms which may therefore be a potential endophenotype suitable for genetic studies.

**Pharmacodynamic Trial of Nimotuzumab in Unresectable Squamous Cell Carcinoma of the Head and Neck: A SENDO Foundation Study.** Rojo F, Gracías E, Villena N, Cruz T, Corominas JM, Corradino I, et al. *Clin Cancer Res.* 2010 Apr 15;16(8):2474–82.

**Purpose** To assess the pharmacodynamic effects of nimotuzumab, an anti-epidermal growth factor receptor (EGFR) monoclonal antibody with intermediate affinity for the receptor, in skin and tumor tissues from head and neck cancer patients. **Experimental design** Pharmacodynamic study in patients with advanced squamous cell carcinoma of the head and neck, unsuitable for chemoradiotherapy, enrolled in a single-center trial. Patients received 8 weekly infusions of nimotuzumab. The first nimotuzumab infusion was administered 1 week before starting radiation, whereas the remaining doses were administered concomitantly with irradiation. Paired biopsies were taken from skin and primary tumors, before (pretherapy) and 1 week (on single-agent therapy) after first infusion. Immunohistochemistry was conducted to assay the effects of nimotuzumab on total and phosphorylated EGFR, phosphorylated extracellular signal-regulated kinase 1/2 (p-ERK1/2), p-AKT, and proliferation (Ki-67). **Results** Nimotuzumab was well tolerated and there was no evidence of skin rash. Objective response was achieved in 9 of 10 patients. The pharmacodynamic assays showed inhibition of p-EGFR in both skin and tumor ( $P = 0.042$  in skin and  $P = 0.034$  in tumor). No significant changes in p-ERK1/2, p-AKT, or Ki-67 were detected in skin. In addition, lymphocytic infiltrates, folliculitis, or perifolliculitis were not observed. In tumor samples, there was an upregulation of p-AKT ( $P = 0.043$ ), a reduction in proliferation index ( $P = 0.012$ ), and a nonsig-

nificant trend toward a decrease of p-ERK1/2 ( $P = 0.091$ ). **Conclusions** The pharmacodynamic data confirmed the ability of nimotuzumab to decrease EGFR phosphorylation. Downstream effects were observed in tumor cells but not in skin, a finding that may help to explain the lack of skin rash in patients treated with nimotuzumab.

**Phenotypic and Genetic Characterization of Antimicrobial profiles of *Helicobacter pylori* strains in Cuba.** Llanes R, Soria C, Nagashima S, Kobayashi N, Gala A, Guzmán D, et al. *J Health Popul Nutr.* 2010 Apr;28(2):124–9.

The study evaluated the antibiotic resistance patterns of *Helicobacter pylori* strains against metronidazole and clarithromycin in a hospital in Havana, Cuba. Eighty-five percent, 22.5%, and 10% of 40 *H. pylori* strains investigated were resistant to metronidazole, ciprofloxacin, and clarithromycin respectively but all were susceptible to amoxicillin and tetracycline. RdxA truncation was found only in metronidazole-resistant strains. In such strains, reported are eight and two novel mutations in the *rdxA* and *frxA* genes respectively. Two-point mutations in the 23S *rRNA* genes of clarithromycin-resistant strains were detected. A high prevalence of metronidazole resistance was found in Cuban *H. pylori* strains. Mutations in the *rdxA* gene may contribute more significantly than *frxA* gene to the high level of resistance to metronidazole. This study supports the need to continue monitoring the antibiotic susceptibility in *H. pylori* in Cuba to guide the treatment of such infection.

**Randomized Controlled Clinical Trial of Fractional Doses of Inactivated Poliovirus Vaccine Administered Intradermally by Needle-Free Device in Cuba.** Resik S, Tejeda A, Lago PM, Díaz M, Carmenates A, Sarmiento L, et al. *J Infect Dis.* 2010 May 1;201(9):1344–52.

**Background** As part of an evaluation of strategies to make inactivated poliovirus vaccine (IPV) affordable for developing countries, we conducted a clinical trial of fractional doses of IPV in Cuba. **Methods** We compared the immunogenicity and reactogenicity of fractional-dose IPV (0.1 mL, or 1/5 of a full dose) given intradermally using a needle-free jet injector device compared with full doses given intramuscularly. Subjects were randomized at birth to receive IPV at 6, 10, and 14 weeks. **Results** A total of 471 subjects were randomized to the 2 study groups, and 364 subjects fulfilled the study requirements. No significant differences at baseline were detected. Thirty days after completing the 3-dose schedule of IPV, 52.9%, 85.0%, and 69.0% of subjects in the fractional-dose IPV arm seroconverted for poliovirus types 1, 2, and 3, respectively, whereas 89.3%, 95.5%, and 98.9% of subjects in the full-dose IPV arm seroconverted for poliovirus types 1, 2, and 3, respectively

(all comparisons,  $P < .001$ ). The median titers of each poliovirus serotype were significantly lower in the intradermal arm than in the intramuscular arm ( $P < .001$ ). Only minor local adverse effects and no moderate or serious adverse events were reported. **Conclusions** This large-scale evaluation demonstrates the feasibility of fractional doses of IPV given intradermally as an antigen-sparing strategy but also shows that IPV given to infants at 6, 10, and 14 weeks of age results in suboptimal immunogenicity (especially for the fractional-dose arm).

**Renal colic at emergency departments. Epidemiologic, diagnostic and etiopathogenic study.** Hermida Pérez JA, Pérez Palmes MD, Loro Ferrer JF, Ochoa Urdangarain O, Buduen Nuñez A. Arch Esp Urol. 2010 Apr;63(3):173–87.

**Objectives** To investigate epidemiologic, etiopathogenic and clinical factors associated with emergency renal colic (RC). **Methods** We performed a prospective cross-sectional multicenter case-control study of 146 patients treated for RC at emergency departments. Data collected included age, sex, localization/severity of pain, symptoms, personal/family medical history, urine analysis, etiopathogenic factors, chemical composition of the lithiasis, and x-ray studies. Comparative statistical analysis was performed using SPSS 12.2 software. RC was more frequent in men; maximum incidence was between 31–50 years for both sex, with 36.3% in men and 21.23% in women; 60.27% of patients rated pain as severe; 140 RC patients (95.89%) had urologic antecedents vs. 15 (10.27%) controls without RC ( $p < 0.001$ ). The most frequent presentation (93.83%) was sudden intense lumbar-abdominal or lumbar pain; 23.28% of RC patients had family history for urinary lithiasis vs. 6.16% controls ( $p < 0.001$ ). Most RC patients were seen during summer (36.58%), 82% of RC patients drank  $< 2L$  of water daily vs. 18.49% in non-RC patients ( $p < 0.001$ ). Hematuria was found in 132 (90.41%) patients with RC vs. 17 (11.64%) in those without ( $p < 0.001$ ). Lithiasis was observed by KUB x-ray in 42.10% of RC patients vs. 57.89% controls, most frequent calculi composition was calcium oxalate monohydrate and dehydrate (61.2%). **Results** We performed a prospective cross-sectional multicenter case-control study of 146 patients treated for RC at emergency departments. Data collected included age, sex, localization/severity of pain, symptoms, personal/family medical history, urine analysis, etiopathogenic factors, chemical composition of the lithiasis, and x-ray studies. Comparative statistical analysis was performed using SPSS 12.2 software. RC was more frequent in men; maximum incidence was between 31–50 years for both sex, with 36.3% in men and 21.23% in women; 60.27% of patients rated pain as severe; 140 RC patients (95.89%) had urologic antecedents vs. 15 (10.27%) controls without RC ( $p < 0.001$ ). The most frequent presentation (93.83%) was sudden intense lumbar-abdominal or lumbar pain; 23.28% of RC

patients had family history for urinary lithiasis vs. 6.16% controls ( $p < 0.001$ ). Most RC patients were seen during summer (36.58%), 82% of RC patients drank  $< 2L$  of water daily vs. 18.49% in non-RC patients ( $p < 0.001$ ). Hematuria was found in 132 (90.41%) patients with RC vs. 17 (11.64%) in those without ( $p < 0.001$ ). Lithiasis was observed by KUB x-ray in 42.10% of RC patients vs. 57.89% controls, most frequent calculi composition was calcium oxalate monohydrate and dehydrate (61.2%). **Conclusions** The incidence of urinary lithiasis and RC in our health care area shows a male predominance. The characteristic pain of RC is severe and appears suddenly. It starts in the back (lumbar region), below the ribs, radiating towards the groin and external genitals (testicles in man or major lips in woman) on the same side. Nausea and vomiting are frequent. Family history of urinary lithiasis and low water intake are risk factors that need to be investigated. Occupations associated with a sedentary life style or with a hot, dry workplace show a higher incidence of lithiasis. A hot, dry climate favours the formation of urinary lithiasis and the highest incidence of lithiasis is in the summer, during the months of July and August. The most frequent component of urolithiasis in our study, as well as in other studies, was calcium oxalate monohydrate and dihydrate.

**The open access movement and Cuban health research work: an author survey.** Sánchez-Tarragó N, Fernández-Molina JC. Health Info Libr J. 2010 Mar;27(1):66–74.

**Objective** To assess the level of knowledge about and the attitudes of the Cuban health researchers towards the open access movement. **Methods** A descriptive, cross-sectional study was conducted from March to June 2007 through a printed questionnaire administered to a group of Cuban researchers from several national health institutes, who were selected by means of a stratified random sampling (160 researchers from 11 institutions). Summary statistics and bivariate correlations were obtained using the SPSS statistical program, version 10.0 for Windows. **Results** The best known initiatives for researchers were those related to biomedical sciences, i.e. PubMed Central, HINARI and BioMed Central. The rate of publication in open access journals and deposit in open access repositories was low. Most of researchers (85%) agree to upload a copy of their papers onto an open access repository if their institution requests so. **Conclusions** Our findings indicate a need for the promotion of the beneficial aspects of the open access movement, as well as training and encouragement for researchers so that they can take full advantage of the potential of this movement.

**Therapeutic efficacy of topical OLEOZON® in patients suffering from onychomycosis.** Menéndez S, Falcón L, Maqueira Y. Mycoses. 2010 May 17. [Epub ahead of print]

The results of the use of ozonised sunflower oil (OLEOZON®) in the treatment of onychomycosis, based on its known antimycotic action and good skin tolerance, by means of a controlled randomised phase III assay are presented. A total of 400 outpatients were randomly divided into two groups: experimental, treated with topical OLEOZON®, two times per day and control, treated also two times per day, with ketoconazole cream 2%, for 3 months. A patient was considered cured when the sick nails regained the normal colour, growth and thickness, with a negative mycological study. In the experimental group, a regression of signs was achieved from the first month of treatment, while in the control group, it was obtained after the third month of treatment. All patients treated with OLEOZON® had improvement in their condition (9.5%) or were cured (90.5%). However, in the control group, only 13.5% of patients were cured, 27.5% improved and 59% remained the same, with significant differences between both the groups. After 1 year of follow-up, experimental and control groups presented 2.8% and 44.4% of relapses, respectively. Topical OLEOZON® demonstrated effectiveness in the treatment of onychomycosis, superior to that of ketoconazole. No side effects were observed.

**Uncommon features in Cuban families affected with Friedreich ataxia.** Cruz-Mariño T, González-Zaldivar Y, Laffita-Mesa JM, Almaguer-Mederos L, Aguilera-Rodríguez R, Almaguer-Gotay D, et al. Neurosci Lett. 2010 Mar 19;472(2):85–9.

This report describes two families who presented with autosomal recessive ataxia. By means of Polymerase Chain Reaction (PCR) molecular testing we identified expansions in the gene encoding Frataxin (FTX) that is diagnostic of Friedreich ataxia. A history of reproductive loss in the two families, prominent scoliosis deformity preceding the onset of ataxic gait, the presence of a sensitive axonal neuropathy, as well as the common origin of ancestors are unusual features of these families. These cases illustrate the importance of molecular diagnosis in patients with a recessive ataxia. The origin of the expanded gene and the GAA repeat size in the normal population are issues to be further investigated. The molecular diagnosis of Friedreich ataxia is now established in Cuba. 