

## RESÚMENES DE PUBLICACIONES

### THE pQCT “BONE STRENGTH INDICES” (BSIS, SSI). RELATIVE MECHANICAL IMPACT AND DIAGNOSTIC VALUE OF THE INDICATORS OF BONE TISSUE AND DESIGN QUALITY EMPLOYED IN THEIR CALCULATION IN HEALTHY MEN AND PRE- AND POST-MENOPAUSAL WOMEN.

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The pQCT-assessed Bone Strength Indices (BSI's, SSI) depend on the product of a “quality” indicator, the cortical Vbmd (vCtD), and a “design” indicator, one of the cross-sectional moments of inertia or related variables (MIs) in long bones. As the MIs vary naturally much more than the vCtD and represent different properties, it could be that the *variation of the indices might not reflect the relative mechanical impact of the variation of their determinant factors* in different individuals or circumstances. To understand this problem, we determined the vCtD and MI's in tibia scans of 232 healthy men and pre- and post-MP women, expressed in SD of the means calculated for each group, and analyzed the independent influence of 1 SD unit of variation of each factor on that of the indices by multiple correlations. Results showed: 1. that the independent influence of the MIs on the indices was generally larger than that of the vCtD, and 2. that in post-MP women the influence of the vCtD was larger than it was in the other groups. This confirms the view that inter-individual variation of vCTD is comparatively small, and that mechanical competence of human bone is mostly determined by ‘design’ factors.

*J Musculoskelet Neuronal Interact 2014* (en prensa)

### IMAGING MUSCLE-BONE RELATIONSHIPS - HOW TO SEE THE INVISIBLE

Jörn Rittweger, José Luis Ferretti

The ontogenetic adaptation of bones to their habitual loads offers a rationale for imaging muscle-bone relationships. Provided that bones adapt to strains that are chiefly determined by muscle contractions, information from muscle-bone scans allows to compare measures of bone stiffness and strength with surrogate measures for muscular loading. Prediction of the mechanical behavior of bone is nowadays well possible by peripheral quantitative computed tomography (pQCT). However, prediction of muscle forces is not currently possible. pQCT offers the opportunity to outline gross muscle cross-sectional area (CSA) as a surrogate measure of the force-generating capacity of muscle groups. Ultrasound and magnetic resonance (MRI) imaging allow identification of single muscles. In addition, ultrasound also offers the possibility to assess the muscle architecture, and thus to assess physiological CSA as a more likely predictor of muscle forces than anatomical CSA. However, no single technique can currently and conveniently assess muscle volume, CSA, and architecture at the level of single muscles. Current attempts to quantify muscle ‘quality’ are not directly related to the force generating capacity, and thus only of indirect help. Hence, one should hope that better imaging assessments of muscle will be possible in future. However, despite these current limitations, muscle-bone strength indicators have been defined that can already be used today in order to differentiate primary and secondary bone disorders, thus underlining the validity of the ‘muscle-bone’ approach.

*Clin Rev Bone Miner Metab 2014* (en prensa)

## **INCREASED LEVELS OF ANTI-P2B ANTIBODIES AND DECREASED CARDIAC INVOLVEMENT IN PATIENTS WITH PROGRESSIVE CHAGAS HEART DISEASE UNDERGOING $\beta$ 1 SELECTIVE ANTAGONIST TREATMENT**

**Vicco MH, Pujato N, Bontempi I, Rodeles L, Marcipar I, Bottasso OA.**

Background: Studies indicate that antibodies cross-reacting with cardiac  $\beta$ 1 adrenergic receptors are likely to play a role in the development of chronic Chagas heart disease (CCHD). In parallel, clinical trials have shown that  $\beta$ 1 antagonist drugs exert beneficial effects in the prognosis of patients with CCHD. In a group of patients with CCHD undergoing therapy with  $\beta$ 1blockers, we have now evaluated the levels of anti-p2 $\beta$  antibodies as well as the severity of CCHD.

Methods: We performed a cross-sectional study in *T. cruzi* seropositive patients categorized according to a standard CCHD classification. All individuals were subjected to a complete clinical examination.

Results: There was no association between CCHD stages, electrocardiographic conduction disturbances and echocardiogram pathological signs with the levels of autoantibodies. However, when patients were analyzed according to selective cardio  $\beta$ 1 blockers therapy, those receiving treatment had higher levels of anti-p2 $\beta$ . Patients from CCHD stage III treated with combined therapy of cardio- $\beta$ 1 selective blockers, enalapril, and statins, presented decreased cardiac involvement and lower score of risk mortality than individuals from the same group not treated.

Conclusions: Our results suggest that selective cardio  $\beta$ 1 blockers may modify the auto-antibodies anti-p2 $\beta$  levels, and that combined therapy in patients with CCHD stage III might be associated with lower cardiac involvement and risk score of mortality in patients with heart failure. Longitudinal studies will help to ascertain the proper role of  $\beta$ 1 blockers in the immunopathological processes underlying chronic Chagas disease.

*Can J Cardiol 30: 332-7, 2014.*

## **DECREASED LEVEL OF ANTIBODIES AND CARDIAC INVOLVEMENT IN PATIENTS WITH CHRONIC CHAGAS HEART DISEASE VACCINATED WITH BCG.**

**Vicco MH, Bontempi I, Rodeles L, Yodice A, Marcipar IS, Bottasso O.**

Studies indicate that *T. cruzi* is capable of inducing immunological disturbances such as decreased expression of molecules involved in T cell survival and costimulation for antigen-driven T cell responses. On the other hand, several reports have described that BCG vaccination induces a T-helper 1 type immune response with protective effects in different pathologies. In this regard we evaluated whether BCG vaccination coexists with a better clinical and immunological profile of chronic chagas heart disease. We performed a cross-sectional study in *T. cruzi* seropositive patients categorized according the BCG vaccine background and to the well-established CCHD classification provided by Storino et al. All individuals were subjected to a complete clinical examination. All patients presented detectable levels of auto antibodies anti-p2 $\beta$ , anti-B13, anti-FRA as well as and anti-parasite homogenate immunoglobulins which were unrelated to age and sex distribution or blood pressure values. Comparisons according to BCG vaccination revealed that individuals who had not been vaccinated presented higher values of antibodies, and patients without BCG vaccine had an OR of 6.1 (95% CI: 1.23 - 29.25, p=0.02) for globally dilated cardiomyopathy with reduced ejection fraction, (Hosmer & Lemeshow test of 5.2 p=0.73). Our results suggest that BCG vaccination coexists with a better clinical and immunological profile of chronic chagas heart disease, associated with lower cardiac involvement.

*Med Microbiol Immunol 2014* (en prensa)

## COMPARATIVE EFFECTIVENESS OF METRONOMIC CHEMOTHERAPY WITH TWO DRUGS COMBINATIONS. OUR EXPERIENCE IN THE PRECLINICAL FIELD.

Rico MJ, Perroud HA, Mainetti LE, Rozados VR, Scharovsky OG.

Metronomic chemotherapy refers to the chronic, equally spaced, delivery of low doses of chemotherapeutic drugs, without extended interruptions. Previously, we developed two combined metronomic schemes for the treatment of murine mammary tumors. The aim of this study was to compare their effects on tumor and metastasis growth, survival and toxicity. Metronomic chemotherapy with Cyclophosphamide + Celecoxib (Cy+Cel) showed higher antimetastatic power than Cyclophosphamide + Doxorubicin (Cy+Dox), while being similar in other aspects. That difference, plus the advantage that represents its oral administration, suggests that the Cy+Cel combination is more suitable than Cy+Dox for metronomic chemotherapy of mammary tumors and could be proposed for the translation to the clinic.

*Cancer Invest 32: 92-8, 2014.*

## ERRATA

En el número anterior (vol. 79, N° 3 de 2013) en el artículo que comienza en pág. 112 (*Complicaciones endocrino-metabólicas de la obesidad en niños y adolescentes*, de J. Chiarpenello y col.), se omitió el lugar de trabajo de los autores: Servicio de Endocrinología, Metabolismo y Nutrición, Unidad de Endocrinología Infantil, Hospital Provincial del Centenario, Rosario.



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