

Keywords

Pharmacogenomics, Knowledge, Students, Curricular plan

P108**Influence of the rs776746 CYP 3A5 gene polymorphism on response to immunosuppressant tacrolimus in patients undergoing liver transplantation: a systematic review**

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Background

Hepatic transplantation is a lifesaving therapy that has been increasing over the years in Portugal. Its success is due largely in part to the use of immunosuppressants, like tacrolimus, the first-line immunosuppressant drug for people undergoing liver transplantation. It is a drug with narrow therapeutic window and great inter-individual variability. This variability is explained in part by polymorphisms of the CYP3A5 gene, which encodes the CYP3A5 metabolizing enzyme. The rs776746 polymorphism affects the CYP3A5 gene and gives rise to a non-functional metabolizing enzyme. The CYP3A5 gene is expressed in both the liver and the gut, that is, the metabolism of tacrolimus is affected by the transplanted liver (donor) genotype, as well as by the gut (receptor) genotype. The identification of polymorphisms becomes important especially in the period immediately after transplantation in order to avoid acute rejection of the organ.

Objective

The objective of this work was to review the influence of rs776746 polymorphism of the CYP3A5 gene on pharmacokinetics of tacrolimus.

Methods

A systematic review was conducted through the Pubmed database search, from 2000 to 2017. Articles that meet the study query and the inclusion and exclusion criteria were included for review.

Results

We selected 23 articles that discuss the influence of the rs776746 polymorphism on the pharmacokinetics of tacrolimus. The evidence suggests that individuals with the CYP3A5*3 (non-expressing) allele have a decreased metabolism of tacrolimus and, consequently, lower blood concentrations of the drug compared to individuals carrying the CYP3A5*1 (expressing) allele. The receptor genotype plays a more important role in the first days after transplantation and the donor genotype becomes more important later when the transplanted organ begins to function properly.

Conclusions

This review concluded that regarding hepatic transplantation it is important to identify both the polymorphisms affecting the metabolism of tacrolimus in the donor and recipient genotypes for a more effective dose adjustment, especially in the critical period immediately after transplantation.

Keywords

Transplant, Liver, Polymorphism, rs776746, Tacrolimus, CYP3A5.

P109**The FITWORK European Project - good practices to develop physical activity programs at work**Maria Campos, Alain Massart, Carlos Gonçalves, Luís Rama, Ana Teixeira
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Background

Workplace physical demands have widely changed in the last century. Nowadays, most of the jobs in the European Union (EU) have a low overall energy demand. In this context, the FITWORK project aims to develop good practices to support ergonomics and health by implementing physical activity programs, addressed to reduce specific ergonomic risks at the workplace. This 2-year project (2017-

2018) is co-funded by the Erasmus+ Programme of the European Union and coordinated by Instituto de Biomecânica de Valencia (IBV) Spain. The partners are the University of Coimbra (UC); Romtens Foundation, Romania; Eindhoven University of Technology (TU/e); the European Network for Workplace Health Promotion (ENWHP) and KOMAG, Poland (<http://fitwork.eu/>).

Objective

Therefore, the general objective of the project is to promote physical activity at work, awareness of workers and health and safety professionals on the significance of health-enhancing physical activity attending to job demands. To meet this objective, FITWORK will identify good practices in occupational risk prevention through physical activities, including motivational aspects, and best practices for implementing workplace health promotion programs (WHPP).

Methods

The workout programs are being implemented in two different organizations, with experimental group and control group, during six months at the Institute of Mining Technology KOMAG, Poland and INNEX S.R.L, Italy, with the following aims: I) to identify and evaluate the worksites and the professional risks within each organization; II) to adapt the WHP Programme to every worksite: identify the most appropriate exercises to carry out in each worksite and when the workers have to perform them; III) to monitor and collect data using specific instruments and report periodically about the development of the programme; IV) to give recommendations related to good practice and aspects for improving the implementation of the program.

Results

The primary purposes of the analysis of the results are to validate the effect of the designed physical activity programs and to elaborate good practices guidelines in developing and implementing WHP Programs.

Conclusions

There is evidence that behaviour changes are ignited by a complex cocktail of perceived benefits other than health alone, but a lack of evidence still exists on the effectiveness of health promotion activities on productivity, absenteeism or wellbeing. Hence, the desired impact of this European Project is to raise awareness and to engage stakeholders and target groups, sharing solutions and know-how with professional audiences.

Keywords

FITWORK, Job demands, Workplace, Physical activity programs, Erasmus+ Programme.

P110**Adventitious respiratory sounds to monitor lung function in pulmonary rehabilitation**Cristina Jácome^{1,2}, Joana Cruz^{2,3,4}, Alda Marques^{2,5}¹Center for Health Technology and Information Systems Research, Faculty of Medicine, University of Porto, 4200-450 Porto, Portugal;²Respiratory Research and Rehabilitation Laboratory, School of Health Sciences, University of Aveiro, 3810-193 Aveiro, Portugal; ³Center for Innovative Care and Health Technology, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal; ⁴School of Health Sciences, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal; ⁵Institute of Biomedicine, University of Aveiro, 3810-193 Aveiro, Portugal**Correspondence:** Cristina Jácome (cristinajacome@ua.pt)

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Background

Peak expiratory flow (PEF) has been traditionally used to monitor lung function in patients with chronic obstructive pulmonary disease (COPD) before pulmonary rehabilitation (PR) sessions. However, PEF mainly reflects changes in large airways and it is known that COPD primarily targets small airways. Adventitious respiratory sounds (ARS - crackles and/or wheezes), are related to changes within lung morphology and are significantly more frequent in patients with acute exacerbations of COPD. Thus, ARS may be also useful for the routine monitoring of lung function during PR programs.

Objective

This study explored the convergent validity of ARS and PEF in patients with COPD.

Methods

Twenty-four (24) stable patients (66 ± 9 years; FEV1 $71 \pm 19\%$ pred) participating in a PR program were included. Assessments were conducted immediately before one PR session. Presence of ARS (crackles and/or wheezes) at posterior right chest was first assessed by a physiotherapist using a digital stethoscope (ds32a, ThinkLabs, CO, USA). Resting dyspnoea was collected using the modified Borg scale (0-10) and PEF with a peak flow meter (Micro I, Carefusion, UK). Independent t-tests, Pearson and point-biserial correlations were used.

Results

ARS were present in 5 participants (20.8%). Patients with ARS had a lower PEF than patients without ARS (294 ± 62 l/min vs. 419 ± 128 l/min; $p = 0.048$). PEF was negatively correlated with presence of ARS ($r = -0.41$; $p = 0.048$). Resting dyspnoea was negatively correlated with PEF ($r = -0.41$; $p = 0.039$), but not with ARS ($r = 0.21$; $p = 0.32$).

Conclusions

Findings suggest that both ARS and PEF offer complementary information before a PR session, but that ARS provide additional information on the patients' respiratory status. Further research correlating ARS and PEF with patients' performance and progression during PR is needed to strengthen the usefulness of assessing these parameters in PR.

Keywords

Peak expiratory flow, Adventitious respiratory sounds, Crackles, Wheezes, Pulmonary rehabilitation.

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Health care services and their influence on the autonomy and quality of life of the elderly

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Background

Primary Care (PA) performance can be assessed by Ambulatory Care-Sensitive Conditions (ACSC) [1]. They are health problems whose morbidity and mortality can be reduced through resolute and comprehensive care. The performance and access to the health system can delay the hospitalizations of the elderly with all the risks arising from it [2,3].

Objective

Analyse the impact of actions of health care of the elderly on primary care in the ICSAB rate.

Methods

Ecological study of the information on the hospitalizations of people over 60 years of age was obtained by hospital admission authorizations (HAA) from the Hospital Information System (HIS), from all municipalities in the state of Santa Catarina (SC) from 2008 to 2015. For the definition of the Primary Care Sensitive Conditions (PCSC), the official report published by the Ministry of Health was used [4]. The crude PCSC rate was calculated by the ratio between the number of PCSC in the elderly and the reference population for the period multiplied by 10,000. Next, the PCSC hospitalization rates for the elderly were standardized by age using the direct method, using the world population [5] as the standard. To soften the historical series, as a function of the oscillation of the points, was calculated the moving average centred in three groups. The analysis was performed through the Joinpoint program, version 4.3.1, used to calculate the variation of the rates of hospitalization of elderly people by age-adjusted PCSC, in the period from 2008 to 2015, resulting in the behaviour of the rate in the period studied for each municipality of Santa Catarina.

Results

The analysis showed that for each percentage point of increase in the elderly population rate, one percentage point increases in the annual rate of hospitalization rate for PCSC in the elderly ($R^2 = 0.025$). The variables of the performance of attention to the elderly did not show association in the hospitalizations.

Conclusions

The individual's lifestyle may be more determinant for a healthy aging than access to services when the individual has aged. In order for services to effectively act as a reducer of hospitalizations in the elderly they must be offered before the establishing of the aging process in the individual.

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Keywords

Aged, Primary Health Care, Health Promotion, Healthy Aging, Life Style.

P112

Morphological and functional cardiac changes in TAVI follow-up – evaluation through transthoracic echocardiography

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Background

Aortic Stenosis is a valvular disease with increasing prevalence. Transcatheter aortic valve implantation (TAVI) is a treatment option for patients who cannot undergo surgical valve replacement [1,2,3,4].

Objective

The aim of this study was to describe and compare morphological and functional cardiac changes, through transthoracic echocardiography, in the follow-up after TAVI.

Methods

Patients, with ages between 63 and 85 years old, submitted to TAVI were evaluated by transthoracic echocardiography between 24h to 72h and 1 to 4 months after the procedure. The study variables selected were perivalvular regurgitation, maximum velocity and gradient, left ventricular (LV) function and dimensions, and left atrium (LA) diameter. Statistical analysis of the study variables was made using descriptive statistics, Shapiro-Wilk test, Wilcoxon's test and McNemar test. The results were considered statistically significant when p value < 0.05 .

Results

It was registered a significant increase in maximum velocity and gradient ($p=0.004$ and $p=0.010$, respectively) from the first to the second echocardiogram. There weren't significant differences in LV ejection fraction, LV telediastolic and telesistolic volumes and in LA diameter. LV index mass decreased comparing to the first echocardiogram (from 157.92 to 142.28 g/m²), however, this difference wasn't statistically relevant. The prevalence of regurgitation (80%) was unchanged between evaluations.

Conclusions

Transcatheter valve aortic implantation is a relatively new procedure for aortic stenosis treatment, with morphological and functional changes in the heart [3] The studied variables didn't demonstrate any significant changes, with the exception of maximum velocity and gradient. LV mass decreased in average 15.71