

CROATIAN INTERNATIONAL PUBLICATIONS

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Polašek O, Leutenegger AL, Gornik O, Zgaga L, Kolčić I, McQuillan R, Wilson JF, Hayward C, Wright AF, Lauc G, Campbell H, Rudan I. Does inbreeding affect N-glycosylation of human plasma proteins? Mol Genet Genomics. 2011;285:427-32

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Inbreeding depression and heterosis are the two ends of phenotypic changes defined by the genome-wide homozygosity. The aim of this study was to investigate the association of genetic marker-based homozygosity estimates with 46 N-glycan features measured in human plasma. The study was based on a total of 2,341 subjects, originating from three isolated island communities in Croatia (Vis and Korcula islands) and Scotland (Orkney Islands). Inbreeding estimates were associated with an increase in tetrantennary and tetrasialylated glycans, and a decrease in digalactosylated glycans ($P < 0.001$). The strength of this association was proportional to the mean cohort-based inbreeding coefficient. Increase in tetraantennary glycans is known to be associated with various tumours and their association with inbreeding might be one of the mechanisms underlying the increased prevalence of tumours reported in some human isolated populations. Further studies are thus merited in order to confirm the association of inbreeding with changes in glycan profiles in other plant and animal populations, thus attempting to establish if glycosylation could indeed be involved in mediation of some phenotypic changes described in inbred and outbred organisms.

Gornik O, Gornik I, Zagorec Kolednjak I, Lauc G. Change of transferrin sialylation differs between mild sepsis and severe sepsis and septic shock. Intern Med. 2011;50:861-9.

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Objective and Design: To investigate the association between the severity of sepsis and changes in sialylation of serum proteins we have conducted a single center pilot study.

Subjects and Methods: Sialylation of transferrin (with enzyme-linked lectin assay-ELLA) and total serum proteins (with colorimetric assay) as well as serum iron and transferrin levels were measured in 27 patients with sepsis through the first eight days of the disease.

Results: Total serum sialylation increased in the first two days, transferrin sialylation decreased, while serum iron and transferrin fell. Patients who developed severe sepsis had either a small or marked change in transferrin sialylation while in patients with mild sepsis sialylation decreased moderately.

Conclusion: We hypothesize that the change in transferrin sialylation could be a reflection of the intensity of inflammatory response which is insufficient if under-expressed and detrimental if over-expressed. This new feature is a potential marker of sepsis severity early in the disease.

Grgurević I, Čikara I, Horvat J, Lukić IK, Heinzl R, Banić M, Kujundžić M, Brkljačić B. Noninvasive Assessment of Liver Fibrosis with Acoustic Radiation Force Impulse Imaging: Increased Liver and Splenic Stiffness in Patients with Liver Fibrosis and Cirrhosis. Ultraschall Med. 2011;32:160-166.

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PURPOSE: To evaluate acoustic radiation force impulse imaging (ARFI) of the liver and spleen as a new method for the noninvasive assessment of liver fibrosis (LF).

MATERIALS AND METHODS: Three groups of 58 examinees were studied: (A) 20 healthy volunteers; (B) 18 patients with chronic viral hepatitis (CVH) B or C having liver fibrosis stag-

es F 1 - 4 (assessed by liver biopsy; Ishak classification); and (C) 20 patients with liver cirrhosis (LC). All participants were examined using the Siemens ACUSON S 2000 Ultrasound Virtual Touch Tissue Quantification™ system. Ten measurements were performed on both liver lobes and three measurements on the spleen, and the obtained mean values (shear wave velocities [SWV] expressed in m/s) were compared between the groups. In 20 patients the splenic artery pulsatility index (SAPI) was also measured and correlated to the liver and splenic ARFI and histological stage of LF.

RESULTS: Hepatic ARFI measurements demonstrated a significant correlation to LB results (Spearman's $\rho = 0.766$; $p < 0.001$) and SWV cut-off values of 1.3 (AUC 0.96) and 1.86 (AUC 0.99) could reliably differentiate between healthy (A) and non-cirrhotic CVH (B), as well as between non-cirrhotic CVH (B) and LC (C). Splenic SWV cut-off value of 2.73 (AUC 0.82) could differentiate between the patients with LC and non-cirrhotic CVH. A significant correlation was also observed between the SAPI and liver ARFI results ($\rho = 0.56$; $p = 0.013$).

CONCLUSION: The hepatic and splenic SWV measured by ARFI increase with the LF stage, and the hepatic SWV correlate well with SAPI. This new technology enables simultaneous morphological, Doppler and elastometric examinations and might improve the accuracy of noninvasive liver fibrosis assessment.

Božičević I, Grgić I, Židovec-Lepej S, Čakalo JI, Belak-Kovačević S, Stulhofer A, Begovac J. Urine-based testing for Chlamydia trachomatis among young adults in a population-based survey in Croatia: Feasibility and prevalence. BMC Public Health. 2011;11:230.

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BACKGROUND: We assessed the feasibility of collecting urine samples for testing on genital Chlamydia trachomatis infection in a population-based survey, and prevalence of this infection among young people aged 18-25 in Croatia. In Croatia, as in the other countries of Eastern Europe, there is a lack of data on prevalence of C trachomatis in the general population, including young adults.

METHODS: We sampled participants using a nationally representative, multi-stage stratified probability sample of young men and women. Detection of C trachomatis DNA

in urine samples was performed by using a real-time PCR assay COBAS® TaqMan® CT Test, v2.0.

RESULTS: Overall, 1005 young adults participated in the behavioural part of the survey, and 27.9% men and 37.5% women who were sexually experienced agreed to provide urine samples for testing on C trachomatis. Using multivariate analysis, women were significantly more likely to provide urine samples than men (aOR = 1.53, 95% CI 1.14-2.06) as were those who reported no condom use at last intercourse (aOR = 1.95, 95% CI 1.44-2.62). Prevalence of C trachomatis infection among those who were sexually experienced was 7.3% in men and 5.3% in women.

CONCLUSIONS: Population-based surveys that use probabilistic sampling are a feasible way to obtain population estimates of C trachomatis prevalence among young adults in Croatia, but it is challenging to obtain an adequate response rate. The prevalence of C trachomatis among young adults in Croatia found in this study was higher than that found in other European countries with similar survey response rates.

Štulhofer A, Kuljanić K, Buzina DŠ. Sexual health difficulties in a population-based sample of Croatian women aged 18-35 and the effects of the dual (career and motherhood) role. J Sex Med. 2011;8:1314-21.

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Introduction. The prevalence of sexual health difficulties among women in Croatia is presently unknown. Although women under 40 years of age may be exposed to the most intense demands of the dual role (career and motherhood), they are often assumed to be at lower risk for sexual difficulties.

Aim. To assess the prevalence of sexual difficulties in a population-based study of women aged 18-35 and to explore the possible impact of the dual role on female sexual health.

Methods. The study was carried out in April 2010 on a multistage probability sample of 1,000 women aged 18-35 years. The response rate was 37.3% (1,680 women refused to participate). Multivariate logistic regression was used to analyze the correlates of sexual difficulties, including the dual role.

Main Outcome Measures. The prevalence of the four most common female sexual health difficulties (lack of desire, lubrication difficulties, inability to reach orgasm, and pain during intercourse) were measured using the one-item indicators from the Global Study of Sexual Attitudes and Behaviors.

Results. Among coitally experienced women (N=870), 27.6% reported having a lack of desire, 23.6% pain during sexual intercourse, 23.1% inability to reach orgasm, and 18.5% difficulties with genital lubrication. All four difficulties were negatively associated with sexual satisfaction, but only the lack of sexual interest and inability to reach orgasm seemed to substantially decrease sexual well-being. In multivariate analyses, age, education, being in a steady relationship or married, and partner communication about sexuality were significant correlates of reported sexual difficulties. The dual role was not a significant predictor of sexual health difficulties.

Conclusions. A substantial proportion of participants reported one or more sexual health difficulties that lasted for at least 2 months. Women in the dual role were not at an increased risk of experiencing difficulties in sexual functioning.

Vadla R, Božikov J, Akerström B, Cheung WY, Kovačić L, Masanović M, Merilainen S, Mihel S, Nummelin-Niemi H, Stefanaki I, Stencrantz B. Differences in healthcare service utilisation in elderly, registered in eight districts of five European countries. Scand J Public Health. 2011;39:272-9.

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AIMS: The aim of the study was to compare and analyse the differences in self-reported frequencies of visits paid to physicians and hospitalisation rates, as well as their association with socio-demographic factors and health status self-rated by elderly.

METHODS: A cross-sectional study was performed in eight districts of five European countries (Finland, Sweden, Ireland, Croatia, and Greece). A total of 3540 persons aged 70 or more were interviewed by trained interviewers. Healthcare service utilisation and its association with demographic characteristics and self-rated health were analysed using descriptive statistical methods, chi-square test, and logistic regression.

RESULTS: Almost 90% of elderly visited a physician in the past year; 50% visited a specialist, while 24% were hospitalised. A visit to a specialist was paid by 70% of the Greek, 50% to 60% of the Croatian, and around 40% of the Irish, the Finnish, and the Swedish elderly. The highest proportion of hospitalisations (32%) was encountered in Greece and the lowest one (20%) in Sweden. Self-rated poor health appears to be the only common denominator associated with increased healthcare utilisation. Younger age stood out as a statistically significant predictor of the likelihood of specialist consults, while older age, male gender, and the synergy of male gender and current single life were disclosed as the predictors of hospitalisation frequency.

CONCLUSIONS: Healthcare service utilisation exercised by the elderly across European districts was found to be highly variable and showed a clear distinction between north-western and south-eastern Europe; this is in line with differences in self-rated health.

Sorta-Bilajac I, Baždarić K, Brkljačić Žagrović M, Jančić E, Brozović B, Čengić T, Čorluka S, Agich GJ. How nurses and physicians face ethical dilemmas – the Croatian experience. Nurs Ethics. 2011;18:341-55.

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The aim of this study was to assess nurses' and physicians' ethical dilemmas in clinical practice. Nurses and physicians of the Clinical Hospital Centre Rijeka were surveyed (N = 364). A questionnaire was used to identify recent ethical dilemma, primary ethical issue in the situation, satisfaction with the resolution, perceived usefulness of help, and usage of clinical ethics consultations in practice. Recent ethical dilemmas include professional conduct for nurses (8%), and near-the-end-of-life decisions for physicians (27%). The main ethical issue is limiting life-sustaining therapy (nurses 15%, physicians 24%) and euthanasia and physician-assisted suicide (nurses 16%, physicians 9%). The types of help available are similar for nurses and physicians: obtaining complete information about the patient (37% vs. 50%) and clarifying ethical issues (31% vs. 39%). Nurses and physicians experience similar ethical dilemmas in clinical practice. The usage of clinical ethics consultations is low. It is recommended that the individual and team consultations should be introduced in Croatian clinical ethics consultations services.