

Internationally, only three studies to date have explored this inter-generational risk association with grandparents. We prospectively examine the relationship between infants' birth-weights and all-cause mortality of their grandparents.

Methods In 2001–2003 the cross-generation cohort study was established at antenatal stage with 1082 participating families, including 1184 grandparents (455 maternal-grandmothers, 271 maternal-grandfathers, 277 paternal-grandmothers and 181 paternal-grandfathers). Grandparents' morbidity and mortality was followed through cohort management. In 2010, the computerised death registry at the General Registrar's Office was searched for any grandparental deaths. HRs were calculated with Cox regression models, adjusted as appropriate for child's gestational age and gender, grandparent's age, mother's age, maternal smoking and height at pregnancy.

Results A total of 85 deaths were registered. An association between lower birth-weight infants (both <2500 g and <3000 g) and grandparental mortality was seen only in maternal line families. A U shaped association with maternal-grandmother's mortality was also consistently observed, but did not reach statistical significance, whether adjusted or not for maternal characteristics [LBW: adjusted-HR (95% CI)=4.2 (0.5 to 37.6); HBW: adjusted-HR (95% CI)=1.3 (0.4 to 4.0)]. Conversely, a significant direct relationship emerged between paternal-grandfather's mortality and higher birth-weight infants (≥ 4000 g) [HR (95% CI)=3.9 (1.2 to 12.0)]. Controlling for maternal characteristics at pregnancy did not attenuate the relationship, but rather strengthened the risk [adjusted-HR (95% CI)=4.5 (1.4 to 14.9)].

Conclusion These findings are consistent with other studies in showing that maternal and paternal lines of transmission of risk differ, meriting further genetic and possible nutrigenomic investigation.

P2-280 WATER AND SUGAR SWEETENED BEVERAGES CONSUMPTION AND CHANGE IN BODY MASS INDEX AMONG BRAZILIAN 4TH GRADERS AFTER ONE SCHOOL YEAR FOLLOW-UP

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Introduction Drinking water has been associated to weight loss in experimental controlled studies and also with reduced weight gain in observational studies, whereas sugar sweetened beverage (SSB) consumption is associated with weight gain, mainly among adolescents. We examined whether water consumption displace SSB and whether the changes in body mass index (BMI) was associated with water and beverage intake.

Methods A randomised school trial of 4th graders from 22 public schools of the city of Niterói, Rio de Janeiro, Brazil, followed students during one school year. Most of the 1134 participants were 10–11 years old. Baseline consumption of water and SSB were evaluated using a drinking frequency questionnaire and one 24-h recall.

Results At baseline, a higher frequency of drinking water was associated with a greater intake of juices ($p=0.02$) and sodas ($p<0.0001$). Baseline frequency of drinking water was negatively associated with one year weight change (regression coefficients of -0.21) comparing more than three glasses of water per day with <3 ($p=0.04$), whereas for an increase in one glass of juice there was an increase of 0.15 units of BMI ($p=0.002$). After adjustment for physical activity and mutually adjustment for water and SSB results were materially unchanged.

Conclusion Our findings confirm the protective effect of drinking water while drinking juices was a risk factor for BMI gain. There was no compensation between water and SSB consumption, therefore the marketing of increasing water consumption would not prevent the excessive weight gain.

P2-281 PREVALENCE OF HEARING LOSS IN HIV-INFECTED BRAZILIAN CHILDREN AND ADOLESCENTS

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Introduction Children and adolescents living with HIV/AIDS may suffer from a variety of hearing problems which are more frequent and sometimes more severe when compared to other children. The objective of this study was to estimate the prevalence of hearing loss and its risk factors in children and adolescents attending the Childhood HIV Treatment Institute (ICr).

Methods Audiologic evaluation was conducted on patients attending at the ICr. Otoscopy was completed prior to audiologic evaluation which was composed of pure tone audiometry, tympanometry and tests of acoustic reflexes. We used the Bureau International d'Audio Phonologie (BIAP) classification to classify hearing loss. The statistical analysis was done using χ^2 test and univariate and multiple logistic regression models.

Results The prevalence of hearing loss was 35.8%. From 106 patients, 22 (58.0%) had conductive hearing loss, 9 (23.6%) had mixed hearing loss and 7 (18.4%) had sensorineural hearing loss. The risk factors for hearing loss were the occurrence of suppurative otitis media (OR=5.7, $p=0.001$) and use of lamivudine (3TC) (OR=5.8, $p=0.028$).

Conclusion Hearing loss is an important side effect in children and adolescents with HIV/Aids. The occurrence of suppurative otitis media and the use of lamivudine contribute to hearing loss in this population. Early detection, evaluation and observation of hearing loss is extremely important in order to prevent severe auditory sequelae.

P2-282 HEARING COMPLAINTS IN HIV-INFECTED BRAZILIAN CHILDREN AND ADOLESCENTS

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Introduction Hearing complaints are important signs that may indicate occurrence of hearing loss. Children and adolescents with HIV/AIDS presents some hearing complaints which are more frequent and sometimes more severe when compared to other children. The objective of this study was to describe the prevalence of hearing complaints in children and adolescents attended at the Childhood HIV Treatment Institute (ICr).

Methods We evaluated 106 patients who are currently attending at the ICr. All information was obtained from parents' interview and hearing evaluation. The χ^2 test was performed.

Results Males represented 53.8% of patients. Age ranged from 5 to 19 years (mean: 13 years) and most frequent age group was

11–15 years (51.0%), followed by 16 years and older (31.1%). The most common hearing complaint was hearing loss (27.4%), followed by otalgia (17.9%) and tinnitus (16.0%). The occurrence of suppurative otitis media was related by 12.3% of patients and 18.9% presented tympanic membrane perforation at the time of hearing evaluation. Patients with hearing loss had higher prevalence of hearing complaints than those with normal hearing: otorrhoea (92.9%×7.1%; $p<0.001$), tinnitus (76.5%×23.5%; $p<0.001$), otalgia (68.4%×31.6%; $p=0.001$) and sensation of fullness in the ear (61.5%×38.5%; $p=0.039$). There was no difference according to dizziness (36.4%×63.6%; $p=0.970$).

Conclusion It is extremely important to precociously detect, evaluate and observe any hearing complaints that these patients may present. These are important signs that if detected and treated early, can avoid serious consequences like hearing loss.

P2-283 BREAST CANCER DATA QUALITY AT THE POPULATION-BASED CANCER REGISTRY OF SÃO PAULO: IMPLICATIONS FOR PUBLIC HEALTH SURVEILLANCE AND PLANNING

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Cancer affects millions of people each year worldwide and represents a major challenge for healthcare systems. Information based on populational data, such as Cancer Registries, are essential to endorse health planning and provision of cancer care services. This paper aims to present a data quality evaluation of breast cancer incidence data from the Population Based Cancer Registry of the Municipality of São Paulo, Brazil. The study included 46311 new breast cancer cases recorded during a two 5-year periods (1997–2001 and 2002–2006). Data analysis was focused on variables such as: date and age at diagnosis, clinical stage, topographic distribution and tumour morphology. For women aged between 40 and 69 years, the most common diagnosis was the malignant neoplasm of breast, unspecified (ICD-10 C50.9), (87.6% of all cases), which does not specify clearly the topography and extent of disease. Problems of information completeness for important variables such as clinical and pathological staging were identified on time-series analysis. Hence, data quality of cancer registries are crucial for breast cancer survival analysis as well as for planning cancer control policies, enhancements on data collection are required.

P2-284 THE IMPACT OF THE PAY-FOR-PERFORMANCE CONTRACT AND THE MANAGEMENT OF HYPERTENSION IN SCOTTISH PRIMARY CARE: A SIX-YEAR POPULATION-BASED REPEATED CROSS-SECTIONAL STUDY

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Background The introduction of pay-for-performance (in 2004) has increased the proportion of income general practitioners are able to earn from targeted quality care to patients with chronic diseases such as hypertension. We wished to investigate the impact of pay-for-performance on the management of patients with hypertension in Scottish primary care.

Method A population-based repeated cross-sectional study using data from 826 973 patients registered with 315 Scottish primary care practices. Information was extracted on age, sex, socioeconomic deprivation, hypertension diagnosis, recorded blood pressure measurement, attainment of target blood pressure levels and provision of hypertension-related prescribing for each year for the period 2001–2006.

Results Increasing treatment for hypertension (Absolute Difference (AD): 9.2%; 95% CI 9.0 to 9.5) was found. The majority of increases in blood pressure measurement (AD: 46.8%; 95% CI 46.5 to 47.1) and recorded hypertension (AD: 5.9%; 95% CI 5.7 to 6.0) occurred prior to 2004. Blood pressure control increased throughout the study period (absolute increase $\leq 140/90$ mm Hg: 18.9%; 95% CI 18.5 to 19.4). After 2004, the oldest female and most socioeconomically deprived male and female patients became less likely than their youngest (<40 years) and most affluent counterparts to have a blood pressure measurement recorded ($p<0.05$). Patients not prescribed therapy were younger and had higher blood pressure levels ($p<0.001$).

Conclusions It is likely that the continued efforts of general practice to improve hypertension diagnosis, monitoring and treatment will reduce future cardiovascular events and deaths in this population. However, there is a need to follow-up older and more socioeconomically deprived patients once they are diagnosed and prescribe anti-hypertensive therapy to younger patients who are likely to benefit from early intervention.

P2-285 ENVIRONMENTAL CADMIUM EXPOSURE AND BLOOD PRESSURE IN THE GENERAL POPULATION

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Introduction Animal studies have been shown a positive association between high dose cadmium exposure and blood pressure. However, effect of low-level cadmium exposure that typically found in the general population is reported in a few studies. Thus, the objective of this study was to examine the relationship between blood cadmium levels and blood pressure in a non-occupationally exposed population.

Methods The subjects consisted of 500 women and 126 men (age range 40–60) in which blood pressure and blood cadmium were measured. Blood cadmium was determined by GFAAS.

Results The geometric mean of blood cadmium was 0.91 µg/l. The prevalence of hypertension was 13.9%. Among all participants, positive relationships were seen between both systolic and diastolic blood pressure and blood cadmium levels ($p<0.05$). Analysis in subgroup found that cadmium levels increased with cigarette smoking rate among current smokers ($p=0.04$). The results of stepwise multiple regression showed that systolic and diastolic blood pressure were significantly correlated with age, body mass index, smoking cigarette and blood cadmium level.

Conclusion The present data provide some support for a causal association between cadmium exposure and increased blood pressure. However, genetic susceptibility and duration of exposure could also be important determinants of these responses to cadmium exposure.