to the season before 30th June) of -2.2 admissions per day (P < 0.0001, CI [-3.30, -1.13]).

Conclusions:

At different times during the pollen season hospital admissions are higher. Pollen present in the period 6-30th June appears to be highly allergenic. Increasing knowledge of allergy triggers may help patients better manage their asthma.

Relationship between access to piped water and CKDu: a conditional autoregressive model

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TPS 931: Water and foodborne chemicals, Exhibition Hall, Ground floor, August 28, 2019, 3:00 PM - 4:30 PM

Background/Aim:

Chronic Kidney Disease of unknown origin (CKDu) has affected many patients in Sri Lanka over the last 20 years but as yet no firm risk factors have been associated with it, making public health interventions difficult. Currently two hypotheses exist for this disease: heat stress and exposure to water borne environmental toxins and/or infectious agents.

Methods:

Data was gathered from the Sri Lankan Census 2012 and mapped via GIS at the Grama Niladhari (village) level. Counts of cases of CKDu collected secondary health centres over the period 2008-11 were applied to each Grama Niladhari and prevalence calculated by dividing case number by population derived from Census. Spatial conditional autoregressive models were applied.

Results:

The consumption of well water as a drinking source and individuals with secondary or lower levels of educational attainments were comparatively higher in Grama Niladharis with high CKDu prevalence. The spatial autoregression reported that a point percent increase in pipeborne water reduces the prevalence of CKDu by 0.003 (95% CI 0.004, 0.0002) percent point in a Grama Niladhari. Estimations were made of influence on the result from surrounding areas by calculating spillover effects.

Conclusions:

Access to piped water reduced the risk of CKDu. Low influence of adjacent areas via spillover effects suggests localised risk factors. Further research is required to establish if this is a real effect or confounded by rurality/socioeconomic status.

A Three-Phase Approach to Examining Multiple Environmental Exposures and Age at Menarche

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OPS 05: Statistical methods to analyze mixtures, Room 114, Floor 1, August 27, 2019, 1:30 PM - 3:00 PM

There is increasing interest in moving from single-exposure models to a multiple exposure approach to capture the complex nature of environmental exposures. Using non-traditional data analytic approaches may enhance our ability to simultaneously investigate several environmental exposures. Data from 253 girls (12-16 years) from the National Health and Nutrition Examination Survey with 41 exposure biomarker measures across six classes of hormonal agents were analyzed. Menarche was dichotomized into "earlier" (≤11 years; 37% of girls) and "later" (≥12 years). We applied a three-phase data-driven modeling strategy to investigate associations between single and joint effects of environmental agents with earlier menarche. Phase 1: We used elastic-net to perform variable selection. Elastic-net identified eleven exposures, with concentrations of blood cotinine having the largest effect estimate. Phase 2: Classification and regression tree (CaRT) and Random Forests (RF) were used to identify important single and joint predictors of menarche based on the variables selected by elastic-net. Urinary concentrations of 2,4,6-trichlorophenol (TCP) was identified as the most important predictor based on mean decrease in accuracy, followed by cotinine. Urinary concentrations of 1-hydroxypyrene (1-OHP) and 2-hydroxyfluorene (2-OHF) were the most frequent interaction pair identified by RF. Phase 3: The effect sizes of the identified predictors and most frequent interaction pair were obtained from binomial regression models. Cotinine was independently associated with earlier menarche, consistent with previous research, when using the threshold values provided in RF (PR =0.24, 95% CI: 0.05, 0.43) however, TCP was not. We did not observe an independent association between cotinine and menarche when the exposure was treated as a single linear term. We found evidence of multiplicative interaction between 1-OHP and 2-OHF (p=0.04). These results illustrate how combining multiple machine learning approaches can provide valuable insight when investigating high-dimensional exposure data and adverse health effects.

Air microflora study of selected offices In Elizade University, Ilara-Mokin

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TPS 752: Respiratory effects and allergies, Exhibition Hall, Ground floor, August 27, 2019, 3:00 PM - 4:30 PM

Introduction

Indoor environments are factors that do impact health. Air quality of indoor environments is a main factor affecting human health, well-being and productivity. A main problem of indoor air quality which people hardly pay attention to is the effect of the presence of diseases causing microorganisms.

Methods

The indoor air microflora of 40 staff's office in Elizade University was studied taking into consideration the number of occupants in the offices, gender, age, the number of windows, temperature, relative humidity and pressure, to know the microbial load and the type of organisms present. Isolation of microbes was done using the settle plate method, using Nutrient Agar (NA) for bacterial isolation and Sabouraud Dextrose Agar (SDA) for fungal isolation. The NA and SDA agar plates were incubated at 37 ° C for 24 hours for bacteria and 25 ° C for 3 days for fungi.

Results

Bacterial counts ranged from 12 cfu/m 3 – Numerous and fungal counts ranged from 1 cfu/m 3 – Numerous. Bacterial isolates were purified from the nutrient agar and further identification of bacteria was done by coagulase test, catalase test and gram staining. While for fungal identification, lactophenol test was done. The CDC MicrobeNet was used to confirm the isolates. The bacteria identified found were Staphylococcus spp., Klebsiella spp., Micrococcus spp., Rhodotorula spp. and Streptococcus spp., while for fungi Fusarium spp., Aspergillus spp., Penicillium spp. and Rhodotorula spp. were identified.

Conclusion

While it is generally known that indoor microorganism can be potentially a health hazard, there is no agreed upon level of airborne organism that signifies contamination for indoors and no health-based guidelines exist. In absence of guidelines it is recommended that more indoor study need to be done to understand the dynamics of airborne organisms in Nigeria from which health-based guidelines can be developed.