[G131] THE IMPACT OF ATMOSPHERIC POLLUTION RELATED HAZE ON VITAMIN D STATUS OF TWO-YEAR-OLDS IN DELHI, INDIA

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Increasing atmospheric pollution (from forest clearance, industrial & vehicular sources) related haze in rapidly developing countries might reduce the solar ultraviolet B radiation reaching the ground level, and this in turn may reduce the cutaneous vitamin D synthesis. The aim of this study was to compare the vitamin D status of 9 to 24 month old children from a relatively less polluted (LP) community on the outskirts of the city. Haze score (HS) in the two areas was measured using the modified Haze Sensor (Carlson). Plasma concentrations of calcium (Ca), 25-hydroxyvitamin D (25(OH)D), a measure of an individual’s vitamin D status, 1,25-dihydroxyvitamin D (1,25(OH)2D), parathyroid hormone (PTH) and alkaline phosphatase (ALP) from 26 children from HP and 30 children from LP communities were measured. No subjects received vitamin D supplements. The data in the table are presented as mean ± SD and range, where appropriate.

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<table>
<thead>
<tr>
<th>High Pollution Area</th>
<th>Low Pollution Area</th>
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<tbody>
<tr>
<td>Age in months</td>
<td>16 ± 4.1</td>
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<tr>
<td>HS score</td>
<td>2.1 ± 0.5</td>
</tr>
<tr>
<td>Ca mg %</td>
<td>9.7 ± 0.9</td>
</tr>
<tr>
<td>ALK iu/l</td>
<td>663 ± 683 (116–373)</td>
</tr>
<tr>
<td>25(OH)D ng/ml</td>
<td>12.6 ± 7</td>
</tr>
<tr>
<td>1,25(OH)2D pg/ml</td>
<td>73.7 ± 30</td>
</tr>
<tr>
<td>PTH pg/ml</td>
<td>42.9 ± 68 (4.8–284)</td>
</tr>
</tbody>
</table>

P<0.05, **P<0.01, ***P<0.001.

We conclude that children living in areas of high pollution are at risk of developing vitamin D deficiency rickets and should be offered vitamin D supplements. Pollution control measures need to be implemented in order to maintain skeletal & general health of children growing up in cities such as Delhi.


[G132] THE EFFECTS OF WORK-RELATED FACTORS ON GROWTH OF WORKING BOYS IN JORDAN

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Aims: To study the effects of work-related variables on growth of working boys in Jordan.

Methods: 135 working boys aged 10–16 years were studied in a cross-sectional survey in the Jordanian areas of Irbid, Jarash and North Jordan Valley. The boys and their mothers were interviewed and data collected on length of working week, income earned by the principal earner, child’s smoking status, and family per capita income. Height and weight were measured for the index child and the mother at the time of the interview. Height and weight for age z-scores based on UK means were derived for each boy. Regression models were fitted on height and weight z-scores to adjust for confounding.

Results: Duration of work (p=0.000), child’s monthly income (p=0.044), maternal height (p=0.002) and family per capita income (p=0.005) were retained in the regression model fitted on height z-score which explained 20.1% of the variance. The model fitted on weight z-score explained 20.1% of the variance and duration of work (p=0.000), child’s monthly income (p=0.022), family per capita income (p=0.017) and maternal height (p=0.004) were retained.

Conclusion: The results of this study suggest that the length of time children have been working and low monthly income have a detrimental effect on growth of working children independent of the effects of low family per capita income and small maternal stature. Relevance of these findings for social policy and health care of working children in Jordan and elsewhere is discussed.

[G133] HIV PREVALENCE IN PAEDIATRIC ADMISSIONS IN MALAWI

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Objectives: This study aimed to determine the prevalence of HIV in paediatric admissions in a central teaching hospital in Africa and its relationship with clinical features and outcome.

Methods: All children admitted to the paediatric wards of QECH over a 2 week period from 6th March 2000, were consented, counselled and if agreed were then tested for HIV by an HIV rapid test with confirmatory ELISA. Patients less than 15 months had HIV confirmed with HIV DNA PCR. Clinical details and outcome at discharge were recorded on standardised forms.

Results: 991 patients were recruited with a mean age of 2.8 years (0–15 years). 187 (19%) died before discharge. HIV prevalence was 32% in babies under 6 months, and 16.2% over 6 months. The mortality in children with HIV infection was higher than those without infection (20.3 % vs 7.8%, χ2, p<0.0005). Children presenting with malnutrition, marasmic kwashiorkor, candida, prolonged fever, lymphadenopathy, suppurative otitis media and diffuse rashes all had a relative risk of HIV infection of greater than 2.0. Children with malaria or gastro-enteritis did not have an increased relative risk of HIV infection.

Conclusion: We have demonstrated the extent of HIV infection in paediatric admissions in Blantyre. We have shown the presenting features and diseases with the highest relative risk of HIV infection. This burden of disease poses a substantial challenge for the health worker and health provision in countries with severely limited resources.

[G134] COMMUNITY ACQUIRED BACTERAEA IN AFRICAN CHILDREN


Aims: One in five children die before their fifth birthday in sub-Saharan Africa. We aimed to describe the prevalence, types, mortality and clinical associations of community acquired bacteraemia in all children admitted to a sub-Saharan district hospital.

Methods: All children admitted to hospital over a period of 2 years were recruited. Elective admissions and those hospitalised within the last 14 days were excluded. Following consent, a detailed clinical pro forma, blood culture, full blood count and a malaria slide were performed.

Results: Of 9982 children admitted, 585 (5.8%) were excluded or not recruited. Cultures from 1249 (13.3%) children grew contaminants. 14.4% of 637 neonates were bacteraemic. E. coli, Klebsiella sp, Acinetobacter sp, Group B Streptococcus and S. pneumoniae were the principal organisms. Bacteraemia in neonates was associated with a high mortality (53.3% vs. 25.0%, p<0.001). 5.4% of 7511 children (non-neonates) were bacteraemic. The commonest organisms were S. pneumoniae, non-typifiable Salmonellae, H. influenzae and E. coli. Mortality in bacteraemic children was high (23.5% vs. 4.0%, p<0.001). A quarter of children who died were bacteraemic and the proportion for ‘malaria’ deaths was similar. Bacteraemia was strongly associated with anaemia and malnutrition.

Conclusions: Community-acquired bacteraemia in hospitalised African children is common and is associated with a quarter of all deaths including malaria deaths. There is a strong association between anaemia and bacteraemia that requires further investigation.

[G135] SEPSIS, SEVERE MALNUTRITION AND GROWTH

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The growth, collagen turnover, insulin like growth factor/binding protein levels and inflammatory status of 104 severely malnourished children aged 6 to 36 months old were assessed on days 1, 15 and 30 of

www.archdischild.com
Aim: Process Evaluation of setting up of a CDC for the only dedicated Children’s hospital in Nepal.

Results: Strengths and weaknesses of current service provision and suggestions for improvement were looked at.

Conclusions: A preliminary visit was made to look at the feasibility and to assess the situation. Rapid Appraisal Tool (validated and used by the WHO) was used to ascertain the views of users and providers about current arrangements and potential for improving developmental paediatric and disability services.

RCPCH has been encouraging such international Child Health Promotions activities. CDC will facilitate and promote inter-agency (UNICEF, WHO, JICA) working and interaction with other voluntary groups working towards the same cause.

Aims: Undergraduates learning Paediatrics in a developing country are faced with large numbers of children & have few teachers. In the Department of Paediatrics at Mbarara University, we introduced a log-book to 3rd & 5th year medical students to see if it could improve their learning and assist in the development of clinical skills.

Methods: A log-book was adapted from that used by undergraduates at Leicester University, UK. It was introduced to the 30 clinical students per term attached to Paediatrics in September 1998. Topics included the spectrum of conditions normally seen and also reflected the increased opportunity to learn practical skills such as intravenous cannulation, lumbar puncture and microscopy of blood films for malaria parasites. Additionally attendance at on-call periods and OSCI of clinical skill’s exams were recorded.

Results: A total of 9 groups have now used the logbook. A tangible improvement in student morale and interest in Paediatrics has been noted.

Conclusion: Students respond to the stimulus & challenge of a self-help logbook in which they chart their clinical experience in Paediatrics. It is a useful tool, which can be adapted to suit the local conditions and foster improved learning in Paediatrics World-wide.