LETTERS TO
THE EDITOR

Maternal smoking and blood pressure in 7- to 8-year-old offspring

Editor,—Morley et al demonstrate convincingly that the systolic blood pressure of offspring of smoking mothers was significantly lower if they were delivered before 33 weeks' gestation than if they were delivered between 33 and 36 weeks.1 We also documented that type II intrarenal glomerular hypertrophy, associated with maternal smoking and which was recorded in the >33 weeks group of Morley’s study, results in a rate of loss of 50% or more of glomeruli in most cases.2 In animals, neonatal unilateral nephrectomy has been shown to result in compensatory glomerular hypertrophy, increasing the filtration area available, but requiring increased glomerular perfusion and, in turn, a raised perfusion pressure.3 The finding of Morley et al, of a difference in the blood pressure of the offspring of these smokers related to delivery before or after 33 weeks, may now be explained by hypothesising a rate of persistent nephrogenesis up to 33 weeks by which time it seems likely that a developmental deficit does not exist in this group. However, in the post 33 week group with low birthweight ratios, a glomerular deficit, requiring a compensatory raised blood pressure in later life, seems likely.

It is perhaps important to reiterate that although postnatal weight gain in growth retarded infants may approach the original genetic potential, the ‘window of opportunity’ nature of nephrogenesis precludes such recovery and compensatory mechanisms may develop with profound effects on morbidity and mortality in later life.

S A HINCHLIFFE
Department of Pathology, Faculty of Medicine, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 4LP

C V HOWARD
Department of Fetal and Neonatal Medicine, Faculty of Medicine, University of Liverpool, Liverpool L7 7DG

3 Aderenic agents and theophylline raise cAMP in the bronchial smooth muscle cells and inhibit contraction. Therefore, the use of theophylline in children with asthma may have interfered with the results. However, no significant difference in plasma IL-3 and IL-4 concentrations was found between the patients receiving ketotifen and theophylline.

Schauer et al have reported an in vivo pre-activation of lymphocytes from asthmatic patients with increased concentrations of IL-4.7 Bruinzeel et al have found that IL-3 and IL-5 are demonstrable in the circulation of asthmatic, but not normal, individuals.8 Schleimer et al have proposed that local release of IL-4 in vivo in allergic diseases may explain the enrichment of eosinophils and basophils observed in asthmatic patients.9 Our data have revealed additional in vivo evidence of increased concentrations and activities of IL-3 and IL-4 in extrinsic asthmatic children.

- Morley comments:
We are currently in the process of measuring plasma IL-3 and IL-4 concentrations in 20 Turkish children with bronchial asthma who were diagnosed according to Lawlor and Taskin's criteria. There were 13 boys and seven girls ranging in age from 49 months to 14 years, with a mean (SD) age of 8.0 (3.1) years. Twelve patients received prophylaxis with ketotifen, eight with theophylline, and all the patients were given β adrenergic agonists during acute attacks. None of the patients were receiving immunotherapy. Twenty healthy children with a mean (SD) age of 9.1 (3.2) years were included in the study as a control group. Plasma IL-3 and IL-4 concentrations were measured using enzyme linked immunosorbent assay (ELISA) with Amersham kits. The minimum detectable concentrations of plasma IL-3 and IL-4 by this method are 1.5 pg/ml and 0.6 pg/ml, respectively.

In the control group, IL-4 and IL-3 were not detectable. In contrast, all patients had detectable concentrations of IL-4, and 9/20 (45%) of patients had detectable IL-3. The values are shown in the table.

Mean (SEM) plasma IL-3 and IL-4 concentrations in asthmatic patients and control group

| Plasma Interleukin-3 and Interleukin-4 concentrations in Turkish asthmatic children |
|---|---|---|
| IL-3 (pg/ml) | IL-4 (pg/ml) |
| Healthy controls | IL-3 | IL-4 |
| (n=20) | (n=20) | (n=20) |
| 7.38 (2.49) | 31.30 (1.64) |
| ND | ND |

ND: non-detectable. Minimum detectable concentrations were considered non-detectable.

None of the patients had received corticosteroids in the last six months which might block cyclooxygen production. Ketotifen antagonises mainly IL-4 induced release of mediators. Aβ Aderenic agents and theophylline raise cAMP in the bronchial smooth muscle cells and inhibit contraction. Therefore, the use of theophylline in children with asthma may have interfered with the results. However, no significant difference in plasma IL-3 and IL-4 concentrations was found between the patients receiving ketotifen and theophylline.

- Morley comments:
We are currently in the process of measuring plasma IL-3 and IL-4 concentrations in 20 Turkish children with bronchial asthma who were diagnosed according to Lawlor and Taskin's criteria. There were 13 boys and seven girls ranging in age from 49 months to 14 years, with a mean (SD) age of 8.0 (3.1) years. Twelve patients received prophylaxis with ketotifen, eight with theophylline, and all the patients were given β adrenergic agonists during acute attacks. None of the patients were receiving immunotherapy. Twenty healthy children with a mean (SD) age of 9.1 (3.2) years were included in the study as a control group. Plasma IL-3 and IL-4 concentrations were measured using enzyme linked immunosorbent assay (ELISA) with Amersham kits. The minimum detectable concentrations of plasma IL-3 and IL-4 by this method are 1.5 pg/ml and 0.6 pg/ml, respectively.

In the control group, IL-4 and IL-3 were not detectable. In contrast, all patients had detectable concentrations of IL-4, and 9/20 (45%) of patients had detectable IL-3. The values are shown in the table.

Mean (SEM) plasma IL-3 and IL-4 concentrations in asthmatic patients and control group

| Plasma Interleukin-3 and Interleukin-4 concentrations in Turkish asthmatic children |
|---|---|---|
| IL-3 (pg/ml) | IL-4 (pg/ml) |
| Healthy controls | IL-3 | IL-4 |
| (n=20) | (n=20) | (n=20) |
| 7.38 (2.49) | 31.30 (1.64) |
| ND | ND |

ND: non-detectable. Minimum detectable concentrations were considered non-detectable.

None of the patients had received corticosteroids in the last six months which might block cyclooxygen production. Ketotifen antagonises mainly IL-4 induced release of mediators. Aβ Aderenic agents and theophylline raise cAMP in the bronchial smooth muscle cells and inhibit contraction. Therefore, the use of theophylline in children with asthma may have interfered with the results. However, no significant difference in plasma IL-3 and IL-4 concentrations was found between the patients receiving ketotifen and theophylline.

Schauer et al have reported an in vivo pre-activation of lymphocytes from asthmatic patients with increased concentrations of IL-4.7 Bruinzeel et al have found that IL-3 and IL-5 are demonstrable in the circulation of asthmatic, but not normal, individuals.8 Schleimer et al have proposed that local release of IL-4 in vivo in allergic diseases may explain the enrichment of eosinophils and basophils observed in asthmatic patients.9 Our data have revealed additional in vivo evidence of increased concentrations and activities of IL-3 and IL-4 in extrinsic asthmatic children.
Dr Morley comments

Arch Dis Child 1995 73: 378
doi: 10.1136/adc.73.4.378-a

Updated information and services can be found at:
http://adc.bmj.com/content/73/4/378.2.citation

These include:

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/