Interleukin-1α and soluble interleukin-2 receptor in atopic dermatitis

Sir,—Dr Agata and colleagues reported enhanced interleukin-2 (IL-2) activity in blood mononuclear cells from patients with food sensitive atopic dermatitis.1 However, in intravenous mixing of normal with hemolytic uraemic syndrome serum. Arch Dis Child 1983;58:703–8.


Pulse oximetry reference values at high altitude

Sir,—Lozano et al in their article on pulse oximetry reference values at high altitude conclude that their reference values could be used for the interpretation of oxygen saturation at high altitude in Bogotá and other cities with a similar altitude.1 However, the authors have failed to take into account potential sources of error.

The fall in arterial oxygen saturation at altitude is due to the fall in barometric pressure rather than the gain in altitude per se. There is a corresponding fall in atmospheric oxygen tension (Pao2) with fall in barometric pressure (at 2000 m atmospheric Pao2=124.9 mm Hg (16.6 kPa) and at 3000 m Pao2=110.2 mm Hg (14.7 kPa)) such that the author's proposed reference ranges are not suitable for use at altitudes other than that of Bogotá (2640 m) as even small changes in altitude will alter the availability of atmospheric oxygen and the arterial oxygen saturation.

Furthermore, at a given altitude the barometric pressure changes with local variations in weather and to a greater extent with the season such that in mid-summer the barometric pressure may be 11 mm Hg (1.47 kPa) higher than in winter. Moreover, there is an equatorial bulge in the atmosphere such that the barometric pressure at a given altitude near the equator is higher than at the same altitude nearer the poles by 17 mm Hg (2.27 kPa). These pressure variations will affect the partial pressure of oxygen in the atmosphere. Although of little significance at sea level pressures, these changes in atmospheric Pao2 in the already 'desaturated' infant at altitude may significantly affect arterial saturation.

Taking these observations into account the authors may find that there are both seasonal and latitudinal variations in arterial oxygen saturation along different elevational gradients in the criteria of Rajka and Langeland2 or IGE concentrations, our results demonstrate that there is enhanced endogenous secretion of IL-1α, and increased stimulation of IL-2 receptors, in children with atopic dermatitis. These findings suggest that these cytokines may contribute to the inflammatory process in atopic dermatitis and are consistent with the observations of Dr Agata and colleagues.

There was a strong direct correlation between IL-1α and sIL-2R (r=0.67, p<0.001) which suggests that expression of the two are dependent. While no apparent relationship existed between either cytokine concentration and disease severity as shown in the criteria of Rajka and Langeland3 or IGE concentrations, our results demonstrate that there is enhanced endogenous secretion of IL-1α, and increased stimulation of IL-2 receptors, in children with atopic dermatitis. These findings suggest that these cytokines may contribute to the inflammatory process in atopic dermatitis and are consistent with the observations of Dr Agata and colleagues.

 Controls Asopic Unpaired t p value

| Mean age (years) | 9.2 | 8.6 | NS |
| Range | 4–14 | 4–16 | |
| IL-1α (pg/ml) | 163 | 369 | p<0.02 |
| 95% CI | 56 to 269 | 373 to 505 | |
| sIL-2R (U/ml) | 189 | 377 | p<0.02 |
| 95% CI | 75 to 301 | 262 to 492 | *

CI=confidence interval.


5 A J Pollard The Children's Hospital, Ladywood Middleway, Ladywood, Birmingham B16 8ET

A J Pollard

The Children's Hospital, Ladywood Middleway, Ladywood, Birmingham B16 8ET


D P Davies Department of Child Health, University of Wales College of Medicine, Heath Park, Cardiff CF4 4XN

P Greally MJ Hussain JM Price

Departments of Child Health, Thoracic Medicine and General Practice, King's College Hospital, London SE5 9PJ

R Coleman

Department of Dermatology, Hospital for Sick Children, Great Ormond Street, London WC1N 3JH


6 A J Pollard: The Children's Hospital, Ladywood Middleway, Ladywood, Birmingham B16 8ET


D P Davies Department of Child Health, University of Wales College of Medicine, Heath Park, Cardiff CF4 4XN

P Greally MJ Hussain JM Price

Departments of Child Health, Thoracic Medicine and General Practice, King's College Hospital, London SE5 9PJ

R Coleman

Department of Dermatology, Hospital for Sick Children, Great Ormond Street, London WC1N 3JH