997 RECURRENT PANNICULITIS ASSOCIATED WITH CYTOTOXIC T LYMPHOCYTES. Anand G. Kantak, Antony J. Ham Pong, Alvin R. Solomon, Srinivasan Rajaraman, Armond S. Goldman. The University of Texas Medical Branch, The Department of Pediatrics, Galveston, Texas.

There is little understanding of the pathogenesis of recurrent panniculitis. It was therefore of interest to find a patient with widespread panniculitis characterized by a specific pattern of inflammatory lymphocytes in the lesions. The C-reactive protein (5.4 mg/dl) and serum immunoglobulins were elevated. Cultures of the lesions were sterile. Her indium-labelled blood leukocytes were found at the sites of subcutaneous lesions. Biopsies of the lesions revealed a lobular panniculitis characterized by many lymphocytes and macrophages but few other types of leukocytes. In addition, few lymphocytes or macrophages were found in the dermis. The types of lymphocytes in the lesions were examined by immunoperoxidase techniques. No immunoglobulin containing cells were found; virtually all lymphocytes were OKT3 positive. Furthermore, no OKT4 positive cells were found, whereas many OKT8 positive cells were identified.

She was treated with oral prednisone because of the sensitivity of cytotoxic/suppressor T cells to corticosteroids. Following that treatment, the lesions desappeared promptly and repeat indium scan showed no leukocyte migration to the skin lesions. Furthermore, when the corticosteroid dose was reduced, the lesions rapidly reappeared and the immunohistopathology of those lesions was indistinguishable from the initial ones. Thus, it appears that the panniculitis in this case may be associated with an influx of cytotoxic T cells.

998 TRANSFER OF TUBERCULIN IMMUNITY FROM MOTHER TO INFANT. Margaret A. Keller, Annette Rodriguez, Thuluvancheri K. Mohandas, Diane M. Reisinger, Sarah R. Alvarez, Diana D. Stewart. UCLA School of Medicine, Harbor-UCLA Medical Center, Department of Pediatrics, Torrance, California

Transfer of tuberculin immunity via the placenta or human milk has been proposed. We examined lymphocytes from infants of tuberculin positive and negative mothers using blastogenesis and lymphokine assays to document this transfer of immunity. A stimulation index $\geq$ 2.8 was considered a positive blastogenic response to PPD.

	Stimulation Index $\geq$ 2.8		
	PPD+ Mother Breast Feeding	PPD+ Mother Bottle Feeding	PPD- Mother Breast Feeding
Infants			
1-5 days of age	6/28(21%)†	2/16(13%)	0/26(0%)†
4-6 weeks of age	3/19(16%)	0/10(0%)	0/15(0%)
3 months of age	0/12(0%)	1/5 (20%)	0/12(0%)

† = $p \leq .05$

Lymphocytes from infants 4-6 weeks of age were cultured with PPD and culture supernatants were assayed for monocyte chemotactic activity using adult monocytes and 5 µm Nuclepore filters in blind well chambers. A Δ migrating monocytes/oil field $\geq$ 15 was a positive response. 6/22 (27%) infants of PPD positive mothers (5/14 breast feeding, 1/8 bottle feeding) but no infant of a PPD negative mother (0/11) produced monocyte chemotactic factor. These lymphokine data support the blastogenesis data suggesting possible enhanced immunity in the breast feeding infant but also transplacental transfer of tuberculin immunity.

999 HUMAN CORD BLOOD: LYMPHOCYTE SUBPOPULATIONS AND LYMPHOKINE PRODUCTION. Ruthann Kibler, Mary J. Hicks, Anne L. Wright, Lynn M. Taussig, University of Arizona, College of Medicine, Tucson.

As part of a study of respiratory health and immunity of children, 61 cord blood specimens were separated into a mononuclear cell population (>70% lymphocytes). Total T, helper T, supressor /cytotoxic (sup/cy) T and natural killer (NK) cells were determined by rosette (ER) and immunofluorescent methods (OKT3, OKT4, OKT8, Leu 11 respectively). B cells were detected by the presence of membrane immunoglobulin. Interleukin-2 (IL-2) and interferon (IFN) production were measured in supernatant fluids of Con A and phorbol ester stimulated cells. IL-2 units were determined by probit analysis, and IFN titers were based on a 50% reduction in virus cytopathic effect ($\log_2$ dilution). NK assays were performed at 5 effector to target cell ratios on K562 cells, and lytic units/10^6 lymphocytes (LU) were calculated. The mean % ± SD for these results are compared to adult values (N=38 to 74).

	Adult	Cord		Adult	Cord
T cells (ER)	78±5	68±4	B cells	16±5	15±4
T3-pan T	69±7	67±8	IL-2 units	2.5±2	4.8±3
T4-helper	44±8	47±8	IFN titer	5.0±1	2.7±1
T8-sup/cy	27±8	14±6	NK LU	67±57	32±28
T4/8 ratio	1.9	3.8	Leu 11-NK	ND	7±4

T sup/cy cells, IFN titers and NK activity were lower while the T4/8 ratio and IL-2 production were increased for cord blood. These findings may relate to the increased susceptibility of neonates to infection. (Supported by NHLBI-SCOR Grant# HL1436-1351 and The Southwestern Clinic and Research Institute).

●1000 DEFECTIVE PRODUCTION OF ANTI-HERPES SIMPLEX VIRUS(HSV) ANTIBODY IN NEONATAL MICE. Steve Kohl, Lian S.Loo, University of Texas Medical School, Department of Pediatrics, Infectious Diseases, Houston, Texas.

Both neonatal humans and mice are extremely susceptible to lethal HSV infection. In humans there is some evidence for defective anti-HSV antibody production. We have now demonstrated that one week old C57Bl/6 mice inoculated i.p. with 10^4PFU of HSV fail to produce anti-HSV antibody-dependent cellular cytotoxicity (ADCC) antibody prior to death (day 5-7). The ontogeny of antibody production is such that one week old mice produce no antibody, 2 and 3 week old mice produce antibody by day 5, and 4 or 6 week olds by day 3 post infection. Injection of $5x10^6$ adult syngeneic (not allogeneic-Balb/C) peritoneal cells one day prior to HSV infection reconstitutes neonatal antibody production on day 5 (reconstituted 30.7 ± 8.4% ADCC activity, 1/20 dilution versus control 1.1 ± 1.1%, n=6, $p < .02$) and day 6 (reconstituted 36.7 ± 13.5% versus control 0.3 ± 0.3%, 1/20 dilution, $p < .05$) and affords survival. Staph protein A absorption and RIA confirm this as IgG antibody. Use of anti-theta or anti-Ia monoclonals plus complement, silica (a macrophage inhibitor), or adherence fractionation has demonstrated the necessity of both adult T cells and macrophages to reconstitute the neonatal antibody production defect. Peritoneal cells thus reconstitute both ADCC effector function and antibody production in neonatal mice. The active or passive reconstitution of human neonates must be investigated.

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1001 NEUTROPHIL HETEROGENEITY IN NEONATES AND ADULTS. Peter J. Krause, Cathy Kosciol, Linda T. Pontius, Harry L. Malech (Spon. by John R. Rave). Univ. of Connecticut, Hartford Hosp., Dept.of Pediatrics, Hartford, CT; Yale Univ, Dept. of Medicine, New Haven, CT.

Monoclonal antibody 31D8 binds strongly to the major subpopulation of neutrophils (PMN) that depolarize and respond chemotactically to formyl peptide (FMLP). 31D8 antigen appears by the myelocyte stage of differentiation (Clin. Res. 32:558A, 1984). Newborns have decreased PMN chemotaxis compared to adults. We compared 31D8 binding to PMN from 9 healthy neonates and adults using indirect fluorescent labeling and flow cytometry. All fluorescence curves generated were negatively skewed and some had a less fluorescent peak on the skewed side of the major peak. In order to determine functional significance of the labeling pattern, PMN were placed in chemotactic chambers with FMLP. Mean chemotactic values were 43.5 ± 2.8µm for neonate and 64.3 ± 12.4 µm for adult ($p < 0.05$). Responsive cells which traversed filters into bottom chambers were collected and labeled with 31D8. These responsive PMN were contained within a symmetric curve about the major peak (31D8 "bright") of the unseparated population and did not include PMN which contributed to the negative skew (31D8 "dull"). This observation allowed calculation of the size of the 31D8 "bright" and "dull" subpopulations. Adult PMN consisted of 79.2 ± 5.8% 31D8 "bright" cells while neonate PMN consisted of 67.5 ± 4.5% 31D8 "bright" cells ($p < 0.0002$). These data suggest that neonate PMN are less responsive chemotactically than adult PMN in part because neonate PMN include a larger percentage of less responsive 31D8 "dull" cells.

1002 THE EFFECTS OF ISOPRINOSINE IN A PATIENT WITH ATAXIA TELANGIECTASIA. Catherine U. Kyong, Gillian Galbraith and H. Hugh Fudenberg (Sponsored by Milton Westphal). Department of Immunology and Pediatrics, Medical University of South Carolina, Charleston, S.C.

Ataxia telangiectasia (A-T), a genetic disorder involving multiple systems is characterized by progressive cerebellar ataxia, oculocutaneous telangiectasia, recurrent sinopulmonary infections and abnormal cellular and humoral immunity. We studied the effects of Isoprinosine in a 6½ year old white female with A-T. The child had a normal birth history. At the age of 5 months, she developed recurrent sinopulmonary infections and otitis media. Ocular telangiectasia was noted at 10 months of age. Progressive ataxia and disarthric speech developed at 17 months of age. Immunologic studies showed low numbers of active and total T cells, negative skin test to Candida; low in vitro DNA synthesis responses to phytohemagglutinin (PHA) and Concanavaline A (ConA); and absent leukocyte migratory inhibitory factor release (LIF) in the presence of Candida and PHA; normal serum immunoglobulins but low IgG_2 and IgG_4. Prophylactic Septra therapy resulted in some decrease of pyogenic infections. Isoprinosine 100 mg/kg/day orally was begun in July 1981. Following the treatment, she showed no neurological improvement but experienced no infection. Significant increase of her T cell function and the levels of IgG subclass were repeatedly demonstrated. No adverse reaction was observed. Our data indicated that similar therapy may be beneficial to other A-T patients.