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**UNPLANNED, UNEXPECTED AND UNATTENDED DELIVERY(UUUD) OUTSIDE OF HOSPITAL.** D. Silpasuvan, E. K. Rajegowda, R. Lala, and C. Ambubuyog. (Spon. by L. M. Gartner).

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In the USA, very little data is available on UUUD. Maternal characteristics and perinatal outcome of 70 UUUD from Oct.'76 to Nov.'77 were identified. All mothers of UUUD were admitted to Lincoln Hospital within 4 hrs. of delivery. During the same period, there were a total of 3,703 in-hospital deliveries (HD), giving an UUUD incidence of 18.5 per 1,000 HD. The main features of UUUD consist of: 1)59% Black (23% HD); 2)37% more than 24 yrs. old (28% HD); 3)17% with parity more than 3 (12% HD); 4)77% on public assistance (43% HD); 5)89%, education below high school (76% HD); 6)58% no prenatal care (19% HD); 7)67% broken families (57% HD); and 8)13% drug-addicted (4% HD). Low-birth-weight rate (no.  $\leq$  2,500 gm/1,000 livebirth), perinatal mortality rate (no. per 1,000 deliveries) and neonatal mortality rate (no./1,000 livebirth) associated with UUUD are compared with those of HD as below:

|                          | UUUD | HD    | p Value |
|--------------------------|------|-------|---------|
| Total Number             | 70   | 3,703 |         |
| Low-birth-weight Rate    | 303  | 115   | <0.001  |
| Perinatal Mortality Rate | 114  | 30    | <0.001  |
| Neonatal Mortality Rate  | 61   | 10    | <0.005  |

The UUUD is associated with poor antenatal planning, lack of education and low socioeconomic condition. These mothers are at great risk for future pregnancies and must be provided with intensive education and medical care.

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**EPIDEMIOLOGY OF OTITIS MEDIA DURING FIRST TWO YEARS OF LIFE.** David W. Teele, Jerome O. Klein, and Greater Boston Collaborative Otitis Media Program.

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To determine the epidemiology of otitis media (OM) during the first two years of life we followed prospectively from birth 2565 children. At every visit we recorded results of pneumatic otoscopy and epidemiologic data. The incidence of OM by age was:

| Age (months) | Number of Episodes of OM<br>(per cent of those in age group) |     |     |          |
|--------------|--|-----|-----|----------|
|              | 0  | 1   | 2   | $\geq$ 3 |
| 0-6          | 85%  | 14% | 1%  | 0%       |
| 7-12         | 48%  | 32% | 13% | 7%       |
| 13-18        | 37%  | 27% | 16% | 20%      |
| 19-24        | 23%  | 21% | 21% | 34%      |

Features associated significantly with 1st episode of OM were: sibling with recurrent OM, race (white>black), sex (male>female). Having a sibling with allergy disposed propoiti to 1st episode, while breast feeding tended to protect propoiti.

Features associated significantly with recurrent OM ( $\geq$  3 episodes) were those noted above. A parent with recurrent OM disposed propoiti to recurrent OM. Breast feeding did not offer protection against recurrences of OM.

The sole feature associated significantly with persistent effusion in the middle ear after 1st episode of OM was the practice of giving a child a bottle in bed.

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**EVALUATION OF TOTAL RADIATION EXPOSURE IN NEWBORN INTENSIVE CARE.** Wilbur Smith, E. Gresham, R. Berg, L. Hobson, E.A. Franken and J.A. Smith (Spon. by Robert

L. Baehner). Indiana Univ. Sch. of Med., Indiana University Hospitals, Departments of Radiology and Pediatrics, Indianapolis.

Total radiation exposure of newborns in intensive care has not been directly evaluated previously. Reusable calcium and lithium fluoride crystals with a sensitivity of one mRem and an accuracy of  $\pm$ 10% were used for direct measurement of the radiation exposure of 133 consecutive infants. Two calibrated crystals were placed in the x-ray field during all radiographic procedures. Technical data including number and type of radiographs were recorded and subsequently correlated with exposure measurements. The average technique was 60 and 65 KVP at 1 MAS for chest and abdominal films, respectively. Chest radiographs gave an average skin exposure of 7.3 mRem (range 2.0-15 mRem); the maximum abdominal exposure was 16 mRem per examination. During these patients' intensive care stay, 14% received a total skin exposure of >100 mRem. The highest recorded was 286 mRem in a child who underwent cardiac catheterization. Precise body measurements of each patient permitted a calculation of potential gonadal exposure due to abdominal radiographs. The average per film was 4.4 mRem for male and 2.2 mRem for female infants. If gonad shields had not been used, 29% of the babies would have received >15 mRem and 56% >10 mRem total gonadal exposure. Infants adjacent to babies being radiographed received negligible scatter radiation. This study describes a novel technique for newborns which permits sensitive monitoring of accumulative radiation exposure and may be useful in establishing radiation limits for infants.

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**PERSISTENCE OF AMPICILLIN-RESISTANT HAEMOPHILUS INFLUENZAE TYPE B IN THE NASOPHARYNX AFTER ERADICATION OF AMPICILLIN-SENSITIVE HAEMOPHILUS INFLUENZAE**

TYPE B BY TRIMETHOPRIM-SULFAMETHOXAZOLE. Ram Yogeve, Herman B. Lander, and A Todd Davis. (Spon. by Henry L. Nadler). Northwestern Univ. Med. Sch., Children's Memorial Hospital, Department of Pediatrics, Chicago.

During an outbreak of ampicillin-resistant H. influenzae type B (AR-HITB) in a children's chronic care facility, the carriage rates of AR-HITB and ampicillin-sensitive H. influenzae type B (AS-HITB) were studied. Multiple culture surveys were done with 27 to 32 children cultured. As many as 81% carried AS-HITB and as many as 48% carried AR-HITB. Using special media (chocolate agar with 2 mcg/ml of ampicillin), we found that 30% of the patients carried both strains. Eradication of both strains was attempted by administering trimethoprim-sulfamethoxazole (TMP-SMX) (8 mg/40 mg) for five days to all individuals on the ward. At the end of therapy, AS-HITB carriage had been reduced by 80%. AR-HITB were not eradicated from any carrier. Doubling the dose and duration of therapy with TMP-SMX similarly had no effect on AR-HITB carriage. Agar dilution susceptibility studies revealed trailing end points for the majority of AR-HITB isolates. Nearly all AS-HITB isolates had sharp end points. These data suggest that: 1.) TMP-SMX appears to be effective in eradicating nasopharyngeal carriage of AS-HITB; 2.) This drug combination is not effective for AR-HITB carriage; and 3.) Trailing end points on in vitro agar dilution tests may provide evidence for in vivo resistance of AR-HITB to TMP-SMX.

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**BLOOD PRESSURE DURING PREGNANCY AS A PREDICTOR OF SUBSEQUENT BLOOD PRESSURE IN THE CHILD.**

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The value of maternal blood pressure during pregnancy (MBP) as a predictor of the child's blood pressure (CBP) at 7 years was explored in a prospective, follow-up study of 5,926 pregnancies. MBP was taken as the average of all measurements recorded between the 16th and 32nd weeks of pregnancy (mean number of readings=3). The table below shows selected percentiles of CBP for categories of the mother's systolic blood pressure (MSBP).

| MSBP   |      | 95-104 | 105-114 | 115-124 | 125-134 | 135-144 |
|--------|------|--------|---------|---------|---------|---------|
| %ile   | 10th | 89/47  | 90/49   | 90/48   | 90/48   | 92/49   |
|        | 50th | 103/62 | 103/63  | 103/63  | 104/63  | 106/65  |
| of CBP | 90th | 116/74 | 118/74  | 117/74  | 118/74  | 121/78  |

CBP shows almost no trend over the MSBP categories up to 135 mmHg. The increment at this level is statistically significant (p=.001) by one-sided t test for both systolic and diastolic pressures in the child.

We suggest that the overall predictive value of MSBP during pregnancy for subsequent blood pressure in the child is poor. Similar results were obtained for diastolic blood pressure in the mother.

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**EFFECT OF GLUCOSE AND OSMOLALITY ON GASTRIC EMPTYING IN NEWBORNS.** Dean L. Antonson, Charles L. Paxson, Jr., Jon A. Vanderhoof. Department of Pediatrics, University of Nebraska, Omaha (Spon. by Glenn C. Rosenquist)

Osmolality of oral glucose-electrolyte solutions may be reduced without altering caloric content if glucose oligosaccharides (GOS) are substituted for glucose. To evaluate the effect of glucose vs GOS on gastric emptying in newborns, GOS were substituted for glucose in a 400 mosm glucose solution to reduce osmolality to 200 or 300 mosm. To assess the effect of osmolality alone on gastric emptying, a 200 mosm glucose solution was increased to 300 or 400 mosm by adding the nonmetabolized pentose xylose. Effect of glucose concentration alone was assessed by comparing 200 vs 400 mosm glucose solutions. On the second day of life, six groups of 5 healthy term newborns were fasted 3 hours. Sixty cc of the test solution containing 5g/l polyethylene glycol 5000 (PEG) as a marker was instilled into the stomach. After 28 minutes, 3 mg of phenol red was instilled and allowed to equilibrate for 2 minutes. Contents were then aspirated and assayed for PEG and phenol red. The following milliliters of original solution remained in the stomach:  $\pm$  SEM

| OSM | glucose/GOS    | glucose/xylose | glucose alone  |
|-----|----------------|----------------|----------------|
| 200 | 34.8 $\pm$ 4.1 | 35.8 $\pm$ 5.0 | 35.8 $\pm$ 5.0 |
| 300 | 43.1 $\pm$ 4.1 | 39.5 $\pm$ 4.1 |                |
| 400 | 41.0 $\pm$ 5.0 | 31.3 $\pm$ 2.2 | 41.0 $\pm$ 5.0 |

p>.2

We conclude that osmolality does not effect gastric emptying in the range of 200-400 mosm in newborns and substitution of glucose by GOS will not enhance gastric emptying of infant formulas or infant glucose-electrolyte preparations.

**GASTROENTEROLOGY AND NUTRITION**