## Intensive Care Nursery

Techniques for intensive care have been adapted to the requirements of the newborn infant. It is now possible to monitor simultaneously heart rate, respiratory rate, arterial and venous blood pressure, electrocardiogram, ambient oxygen and temperature. Improved micro laboratory techniques have made repetitive study of blood gases and acid-base balance possible even in small premature infants. Assisted ventilation can be maintained for long periods if necessary. Clinical application of these techniques requires specially trained physicians and nursing personnel. The ratio of staff to infants must be one to two, three or four. Intensive care has improved mortality from asphyxia, congenital heart disease and neonatal operations, but its place in the treatment of respiratory distress syndrome has not been definitely established.

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## Phototherapy in the Treatment Of Hyperbilirubinemia

Phototherapy is an effective treatment for hyperbilirubinemia of non-hemolytic origin. When premature infants are kept under a bank of fluorescent lights from the first day of life onward, the serum bilirubin levels are lower on day 4 than in infants not receiving this therapy. The need for exchange transfusions is reduced and fewer infants get into the area of moderate hyperbilirubinemia where a danger of subtle brain damage may exist. Since the site of action is in the skin, the yellow color sometimes disappears and it becomes more difficult to estimate serum bilirubin level from clinical appearance. Loose green stools sometimes occur but weight loss and dehydration are not apparent. A slate-gray skin color is sometimes seen but this appearance is not associated with any recognized toxic effect. While a number of theoretical hazards of phototherapy have been proposed, no toxicity has so far been documented.

The major value of phototherapy is in the small, critically ill or bruised premature in whom moderate hyperbilirubinemia is undesirable and exchange transfusion hazardous. The value of phototherapy in the treatment of erythroblastosis due to Rh incompatibility or in other hemolytic processes in which the rate of rise of serum bilirubin is rapid has yet to be evaluated.

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## Gentamicin in the Treatment Of Gram-Negative Infections

Gentamicin sulfate (Garamycin®, Schering) is a new broad-spectrum antibiotic related to streptomycin, neomycin, paromomycin and kanamycin. It is available as a cream or ointment for local use on the skin and also for intramuscular injection.

Gentamicin is bacteriocidal *in vitro* against Staphylococcus aureus including strains resistant to penicillin-G, and also against many strains of Pseudomonas aeruginosa, E. coli, Klebsiella-Aerobacter species and proteus. In general, when organisms acquire resistance to gentamicin they have also acquired resistance to streptomycin, neomycin, paromomycin and kanamycin. However, some strains resistant to others in the group may still be sensitive to gentamicin.

The unique contribution of gentamicin is in its effect upon pseudomonas. Against this organism the other agents mentioned are relatively ineffective and gentamicin approaches the activity of the polymyxins.

Nephrotoxicity and ototoxicity, especially affecting the vestibular systems, are significant, and the ototoxicity may be permanent. Toxicity is closely related to blood levels of 10 $\mu$g per ml or higher. Blood levels in turn are related primarily to dosage and to renal function.

The entire April-May, 1969, issue of *The Journal of Infectious Diseases* is devoted to this subject and is recommended for detailed information.

BENJAMIN M. KAGAN, M.D.


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## Zoster Immune Globulin For Chickenpox Prevention

Zoster immune globulin (ZIG) is effective in preventing chickenpox when given to children within 72 hours of exposure. The minimum effective dose has not been established; however, 2 ml of 16.5 percent gamma globulin prepared from patients with high varicella-zoster complement fixing antibodies provides adequate prophylaxis. Immune serum globulin appears to be ineffective in prevention but may modify the disease when large amounts are used. Since chickenpox is generally a benign disease, passive immunization with ZIG should be limited to patients at high risk, such as children receiving steroids or immunosuppressive drugs, newborn infants, and children with debilitating diseases, particularly malignant disease.

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Ross AH: Modification of chicken pox in family contacts by administration of gamma globulin. New Eng J Med 267:369-376, 1962


## The Hemagglutination Inhibition (HI) Antibody Test for the Determination Of Immunity to Rubella

The HI test, when properly done, is an excellent, rapid, inexpensive method for determining the rubella immune status of an individual. The accurate determination of rubella HI antibodies is especially pertinent as current recommendations suggest that if vaccination of a woman of childbearing age is contemplated, she should be tested for rubella HI antibody. If such antibodies are present, nothing can be gained by immunization. If the test is performed by competent technologists, the presence of any level of HI antibody can be considered indicative of previous infection. If a physician requires aid in the interpretation of test results, his local health department can provide it. Not all the kits available commercially yield reproducible HI results in the hands of the personnel of the average hospital laboratory. Training programs for technologists are currently being sponsored by the State of California Department of Public Health and local medical schools.

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## Diagnosis of Rubella

The hemagglutination-inhibition test as a diagnostic aid has been generally available in laboratories for some time. However, several studies have shown that considerable care must be exercised in interpreting the results. Both false positive and negative tests can be reported because of the difficulties associated with the removal from the serum of non-specific inhibitors of the hemagglutination reaction. If doubt persists, the use of tissue culture neutralization plus complement-fixation tests should resolve the problem.

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