INFECTION CONTROL

HOSPITAL EPIDEMIOLOGY

Volume 11, Number 5 • May 1990

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CONTRAINDICATIONS: Hypersensitivity to yeast or any other component of the vaccine is a contraindication for use of the vaccine

 $\begin{tabular}{ll} \textbf{WARNINGS: Do not give additional injections to patients experiencing hypersensitivity after an 'Engerix Binjection (See CONTRAINDICATIONS') \\ \end{tabular}$

Hepatilis B has a long incubation period Hepatilis B vaccination may not prevent hepatilis B infection in individuals who had an unrecognized hepatilis B infection at the time of vaccine administration Additionally, it may not prevent infection in individuals who do not achieve protective aniibody titers.

PRECAUTIONS: General: As with any percutaneous vaccme, keep epi nephrine available for use in case of anaphylaxis or anaphylactoid reaction

As with any vaccine, delay administration if possible, in persons with any tebrile illness or active infection

Pregnancy: Pregnancy Category C Animal reproduction studies have not been conducted with Engerix B' III is also not known whether 'Engerix B' can cause fetal harm when administed to a pregnant woman or can affect production capacity Give 'Engerix B' to a pregnant woman only if clearly needed

Nursing **Mothers:** It is not known whether 'Engerix B' is excreted in human milk, Because many drugs are excreted in human milk, use caution when giving 'Engerix B' to a nursing woman

Pediatric Use: Engerix B' has been shown to be well tolerated and highly immunogenic in infants and children of all ages Newborns also respond well, maternally transferred antibodies do not interfere with the active immune response to the vaccine

ACVERSE REACTIONS: 'Engerix B' is generally well tolerated Ouring clinical studies involving over 10,000 individuals distributed over all age groups. no serious adverse reactions attributable to vaccine administration were reported As with any vaccine however, 1 is possible that expanded commer call use of the vaccine could reveal rare adverse reactions not observed in clinical studies.

Ten double blind sludies involving 2,252 subjects showed no significant difference in the frequency or severity of adverse experiences between Fingerix ES and plasma dewed vaccines in 36 clinical studies a total of 13 495 doses of Engerix B' were administered to 5,071 healthy adults and children who were initially seringative or hepatitis B markers, and healthy enonates All subjects were monitored for 4 days post administration Fire quency of adverse experiences tended to decrease with successive doses of Engerix B' Using a symptom checklist, if he most frequently reported adverse reactions were injection site soreness (22%), and fatigue" (14%) Other reactions are listed helium.

incidence 1% to 10% of Injections: Induration; erythema, swelling; lever $(>37.5^{\circ}C)$; headache' dizziness *

Parent or guardian completed forms for children and neonates Neonatal checklist did not include headache, fatigue or dizziness

Incidence < 1½ of Injections: Pain; pruritus; ecchymosis, sweating, malaise, chills, weakness, flushing, lingling, hypotension, influenza-like symptoms upper respiratory tract illnesses nausea, anorexia, abdominal pain/cramps, vomiting; constituation diarrhea lymhadenopathy; pain/sittiness in arm, shoulder or neck, arthralgia, myaliga, back pain, rash urlicaria, pete chiae erythema, somnolence, insomnia; irritability; agitation

criate erymema, somnoience, inspornia; irritacility; apitation.

Additional adverse experiences have been reported with the commercial use of Engerix B' outside the United States Those listed below are to serve as alerting information to physicians Anaphylaxis, erythema multiforme including Stevens Johnson syndrome, angioedema; arthritis; tachycardialpalpita tions bronchtospasm including asthma-like symptoms, abnormal liver function tests, migraine; syncope; paresis; neuropathy including hypoesthesia, paresthesia, Guillain Barre syndrome and Bellis palsy; transverse myellits; thrombocytopenia, ezzema; purpura, herpes zoster, vertigo; conjunctivitis, teratits; visual disturbances.

Potential Adverse Experiences in addition, certain other adverse experiences not observed with 'Engerix B' have been reported with fleptavax B[®]† and/or Recombivax HB[®] ‡ Those listed below are to serve as alerting information to physicians Optic neuritis

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NDC 0007-3860-01(package of 1) NOC 0007-3860-11(package of 10) NDC 0007-3860 16 (package of 25)

10 mcg/0.5 mL in Single Dose Vials in packages of 1 vial

NDC 0007-3859-01(package of 1)

† plasma-dewed. Hepatitis B Vaccine, MSD ‡ yeast-dewed, Hepatitis B Vaccine, MSD

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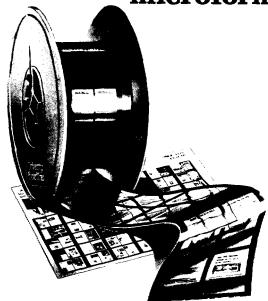
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References

1. Poovorawan Y, Sanpavat S, Pongpunlert W, et al: Protective efficacy of a recombinant DNA hepatitis B vaccine in neonates of HBe antigen-positive mothers JAMA 1989; 261(22):3278-3281. 2 Based on Medi-Span's Hospital Formulary Pricing Guide, December 1989. 3 Data on file, SK&F. 4. Bush L, Moonsammy G. Boscia J: Evaluation of initiating a hepatitis B vaccination schedule with one vaccine and completing it with another. Hepatology 1989;10:689

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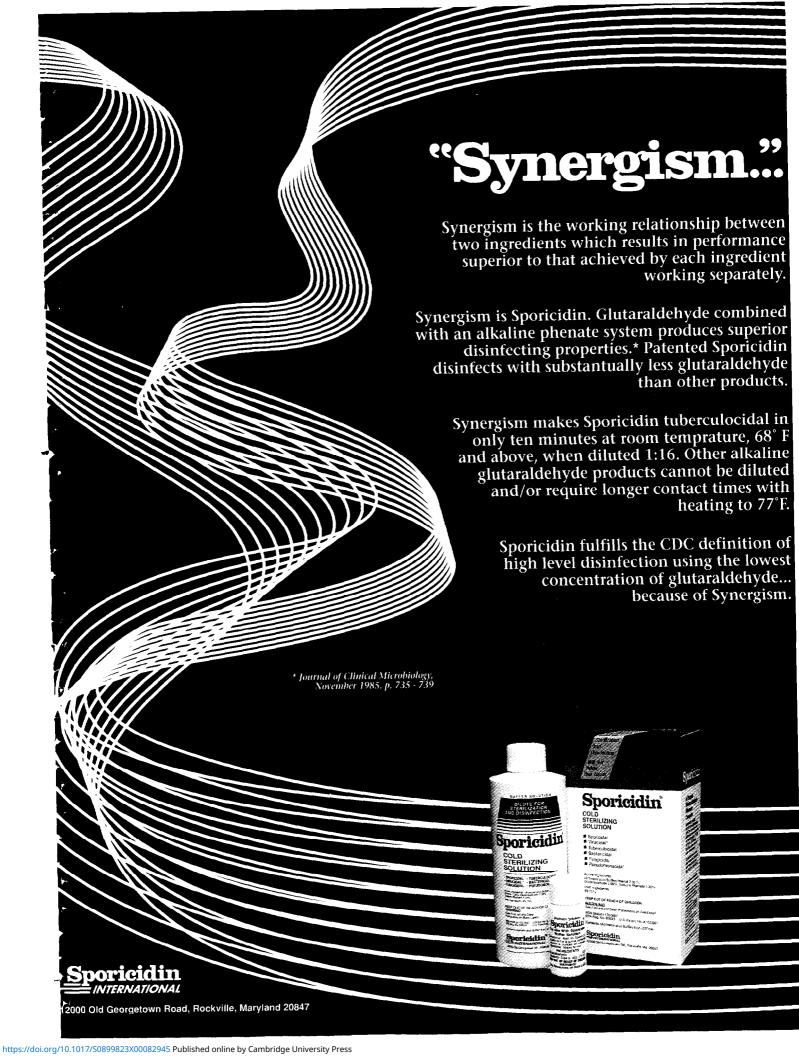
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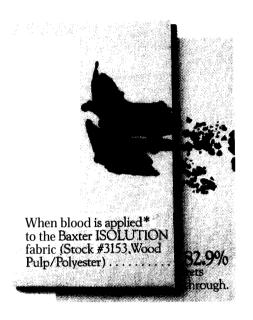
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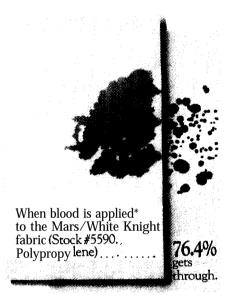
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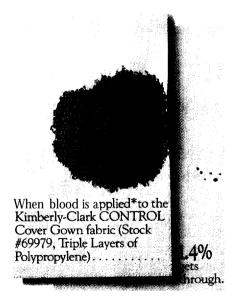


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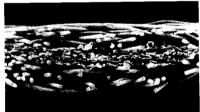
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- 2 Klein, B.S., W.H. Perloff, and D.G. Maki. 1989. Reduction of nosocomial infection during pediatric intensive care by protective isolation. N. Engl. J. Med. 320: 1714-1721.
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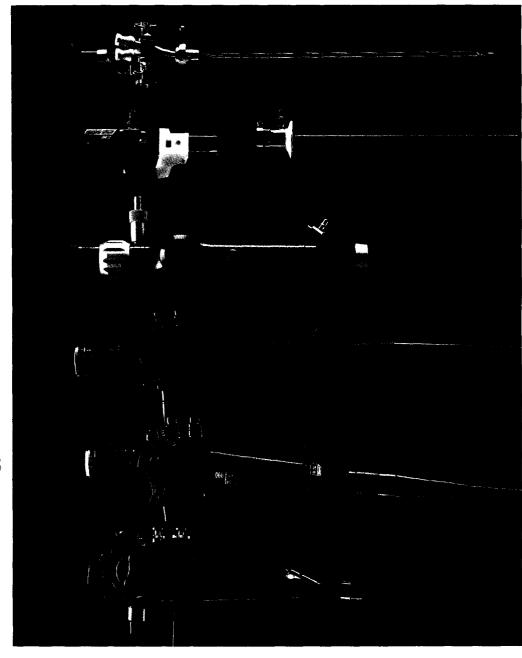
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