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## Reply

Thanks for giving this opportunity to clarify some doubts that the readers have about composition of various colloids, and fluid therapy of septic shock.

1. The composition of various colloids that are available commercially is shown in *Table I*(1). It may be seen that all the

hydroxyethyl starches are very expensive. Moreover, there is no clear-cut advantage of albumin over crystalloids despite several metanalysis and randomized trials in adults. Hence we selected gelatin polymer (Haemaccel®) for this study. It has a long track record of safety and efficacy in adults, which is borne out of case-series involving thousands of patient(3). Haemaccel® (Gelatin Polymer in Saline) is one of the least expensive colloid solutions available, and has good water binding capacity and reasonable duration of action. It also has lesser side effects as compared to dextran.

2. In septic shock, infection triggers endogenous mediators, which in turn injure the capillary endothelium and other organs. Vascular injury leads to mal-distribution of circulation with vasodilata-

TABLE I—Characteristics of Various Colloids.

	Albumin	Haemaccel	Hetastarch	Pentastarch	Dextran 40
M <sub>w</sub> (kDa)	69	35	450	200	40
Sodium (mmol/L)	130-160	145	154	154	154
Potassium (mmol/L)	1	5.1	0	0	0
Duration of action (Hrs)	6	3-4	>8	6-8	3-4
Water binding (ml H <sub>2</sub> O/g colloid)	18	41.7	20	30	37

available colloids are “colloids in saline” solutions.

There is no justification for use of fresh frozen plasma as a volume expander because of high risk of disease transmission associated with it(2). Dextrans are inappropriate for volume expansion in children because of high incidence of adverse effects. Albumin, and

tion and pooling of blood (arterial and venous) and capillary leaks leading to loss of intravascular fluid to interstitial space (“third spacing”). The major physiologic aberration, therefore, in septic shock is hypovolemia and reduced pre-load. Myocardial dysfunction is next important physiologic aberration, responsible for poor tissue perfusion. Vasoactive and

inotropic drugs are used as soon as intravascular volume is restored. Many of our patients did receive inotropes. It should however, be appreciated that after completion of initial resuscitation the fluid leak from intravascular compartment to interstitial space ('third-space loss') does not stop immediately. Moreover, a significant proportion of administered fluid continues to move out of intravascular space. It has been shown that only about 20% of administered saline stays in intravascular compartment by the end of two hours(4). The capillary leak may take several hours, sometime days, before it is reversed. In such patients, therefore, the continuing management of intravascular volume requires replacement of ongoing 'third space loss'. Usually, this is achieved by administration of maintenance fluids at a higher infusion rate but some patients

need fluid bolus because of continuing rapid 'third space loss'.

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## Tobacco use Among Students in Orissa and Uttar Pradesh

### Orissa

The Global Youth Tobacco Survey (GYTS) in Orissa(1) carried out during January- March 2002 that provides the first representative database on tobacco use prevalence among school children in the age group of 13-15 years in Orissa, India.

Among 50 sampled schools; all participated (100%). Among 3541 eligible students 2913 (82.3%) participated in the survey. Ever tobacco use was reported by 20.5%; of them about 30% used their first tobacco at the age of ten years or earlier.

Current tobacco use (any product) was

reported by 14.2%; current smokeless tobacco 10.9%; current smoking by 8.6%. Among smoking, bidi smoking was most common.

Over 2/3rd students saw tobacco products advertisements in TV and outdoor print media and over half in newspaper and social events. About 10% students had some object with tobacco products brand names and were offered free sample of tobacco products. Watching a lot advertisement using tobacco by actors {actors smoking, 100 vs 59.3% (P <0.05); actors chewing 62.6% vs 44.1% (P <0.05)}, vendors offered free samples {Cigarettes 35.4% vs 8.3% (P = <0.05) Bidi 26.3% vs 9.3% (P <0.05), Gutka 21.3% vs 9.1% (P <0.05)}, having objects with tobacco brand logo {Something with Cigarette brand logo 21.2% vs 9.0% (P <0.05); something with