elements. Can Dr. Fribourg state with certainty that this was not selective eradication instead of "retroconversion"? The semantics do not disturb us.

2. We never meant to compare directly with DiSaia and co-workers. In fact, our opening paragraph clearly states that, "we have observed a *different* kind of conversion which we wish to report."

3. Perhaps our observation did not surprise Dr. Fribourg, but it was a new observation for us, and we had not found it described elsewhere. How many patients with endodermal sinus tumor has Dr. Fribourg or any therapist studied by second-look operation after apparently successful chemotherapy? Traditionally, endodermal sinus tumors are considered to be highly virulent, with poor survival, and the opportunity for such study has been limited until the recent advent of improved chemotherapy.

Finally, we make no claim for comparative significance. Instead, we offer this report to suggest that there might be stages in transforming usually lethal neoplasms into benign neoplasms, and that "retroconversion" or "conversion" or "selective cell kill" might all be elements in a complex continuum. Only by encouraging such reports from gynecologic oncologists can enough information be accumulated to justify the prospective in vitro studies which Dr. Fribourg prefers. Perhaps their significance will then be evaluable with perspective and precision.

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Cardiovascular complications of terbutaline for preterm labor

To the Editors:

It was with great interest that I read the article by Katz and colleagues (AM. J. OBSTET. GYNECOL. 139:605, 1981) on cardiovascular complications and terbutaline treatment. The authors found 5% incidence of severe cardiovascular complications in patients treated with infusion of terbutaline for preterm labor.

This figure is surprising. This drug was introduced in our clinic (3,200 deliveries per year) in 1971,[1, 2] and has since been used routinely for treatment of preterm labor. During this period, manifest or suspected pulmonary edema has been recorded in only a few cases, and there have been very few reports about this complication,[3] despite the fact that terbutaline is used in most clinics in Sweden. Drugs with negative inotropic effect or drugs that cause water retention might, together with a beta-receptor agonist, cause cardiovascular problems. This type of complication is also associated with iatrogenic volume overload—and, according to the above-mentioned article, twin pregnancy, also.

However, the authors concluded that they administered terbutaline in a low dose (10 to 30 μg/min) and claimed that the range frequently used is 10 to 80 μg/min. It must be stressed that the maximum rate of infusion is 25 μg/min.[1, 2] Rates of infusion that exceed this have been reported by Wallace and colleagues[4] but cannot be recommended. It can be assumed that the risk of complications of this type is correlated to the maximum rate of infusion of the drug.

Finally, I do agree with the authors' recommendations. Terbutaline is a potent inhibitor of uterine activity but should be restricted to carefully selected patients. Mother and fetus should be carefully monitored during treatment, and immediate withdrawal of the treatment must be considered if pronounced side effects appear.

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Reply to Dr. Ingemarsson

To the Editors:

The 5% incidence of severe cardiovascular complications that was shown by the recent review of our experience with terbutaline tocolysis[1] was initially met by us with the same surprise expressed by Dr. Ingemarsson. Since no other published review, except for a few anecdotal case reports, is available in the obstetric literature, the incidence in other institutions in the United States and Europe remains a matter of speculation. In a recent study by Speroff and associates,[2] an identical 5% incidence of pulmonary edema was found among 99 patients undergoing terbutaline tocolysis. If, indeed, the actual incidence in Sweden is lower, we have no obvious explanation to settle this disparity.

Dr. Ingemarsson's comment about the role of the infusion rate as an etiologic factor in patients with cardiovascular complications deserves clarification. Although our treatment protocol, as well as that of

others,[3] permits rates of intravenous infusion up to a maximum of 80 μg/min, all of the patients with severe cardiovascular complications whom we reported on were treated with infusion rates which were within the range considered to be "safe," even by Dr. Ingemarsson; namely, 10 to 30 μg/min (Table I in Reference 1). Similarly, in a report by Jacobs and associates,[4] who described four patients with pulmonary edema during terbutaline tocolysis, the infusion rates used were within the above-suggested range. It seems, therefore, that not the rate of administration of terbutaline but, rather, the individual patient's response to the infusion plays an important causative role in the development of these complications. At present, we tend to believe that the development of severe side effects could be linked to prolonged tachycardia and excessive circulating plasma volume, both of which lead to a state of high cardiac output and, ultimately, to cardiac failure and pulmonary edema.

Since awareness of the potential risks of beta-mimetic tocolysis is expected to increase, we hope that improvement in the surveillance of patients undergoing treatment will follow, with a resulting decrease in the incidence of these adverse and potentially serious side effects.

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Technique to facilitate delivery of high-floating head at cesarean section

To the Editors:

I have read with interest the article by Warenski (AM. J. OBSTET. GYNECOL. 139:625, 1981).

The application of a small cup (No. 4) of the vacuum extractor seems, to me, to be even less traumatic for infant and mother.

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Reply to Dr. De Clercq

To the Editors:

Although advocates of the Mahlmstrom vacuum extractor have sometimes extended its use to the delivery of the head at low-segment cesarean section, the elapsed time for a safe and reliable application would appear to be a disadvantage in this situation. The silicone rubber vacuum cup of Kobayasha, which has recently become available, can be applied more promptly and might provide a workable alternative to the forceps technique that I described in aiding the delivery of the high-floating head at cesarean section.

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Technique for calculating transfusion volume required to achieve desired hematocrit

To the Editors:

The article, "Isovolumetric partial exchange transfusion in the management of sickle cell disease in pregnancy," by myself, Garcia and Welt, was published on page 403 of the October 15, 1981, issue of the JOURNAL. Since returning the galley proofs of that article, I have discovered a simple technique for calculating the volume of transfusion required to achieve a desired hematocrit:

$$V_t = V \cdot \ln \left\{ \frac{h_t - h_o}{h_t - h_d} \right\},$$

where V is the patient's estimated blood volume, h_t is the hematocrit of the transfusate, h_o is the patient's initial hematocrit, and h_d is the desired hematocrit. V_t is the volume of transfusate required to achieve the desired hematocrit.

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Endocervical lavage in early pregnancy

To the Editors:

Like your contributors Goldberg and associates (AM. J. OBSTET. GYNECOL. 138:436, 1980), my colleagues and I have been investigating the use of endocervical lavage in early pregnancy. We collected aspirates from 12 first-trimester pregnancies prior to termination and prepared them for histologic studies; microscopic analysis of the material showed that all contained fragments of decidua, as well as obvious villous material. Cells cultured from the specimens were karyotyped and tissue typed, and comparison was made with the karyotypes of