Magnesium sulfate use for fetal neuroprotection
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Objective
We aimed to demonstrate the effect of MgSO4 for fetal neuroprotection on maternal and neonatal outcomes of pregnant delivered before 32 weeks and compare results with untreated patients.

Methods
The records of 106 patients who were delivered before 32 weeks of pregnancy were reviewed retrospectively during the period between January 2011- February 2016 at Inonu University School of Medicine Department of Obstetrics and Gynecology. In these patients, patients who were treated with MgSO4 for fetal neuroprotective effect constituted the study group and patients who were not received MgSO4 for the fetal neuroprotection constituted the control group. Patients who were treated by MgSO4 only for the fetal neuroprotection indication enrolled in this study. Patients who received at least loading dose of the treatment were considered as treated for fetal neuroprotection. Pregnants who were treated MgSO4 for tocolysis or eclampsia prophylaxis were excluded. The statistical software package IBM SPSS 22.0 (SPSS Inc., Chicago, Ill., USA) was used for all data analyses.

Results
Of 107 women delivered before 32 th week of pregnancy met study criteria and of these patients 46 were constituted the magnesium sulfate group and 61 to control group. The age (28, 37±4, 97 versus 29, 90±5, 23 respectively; P=0, 129), BMI (26, 25±4, 12 versus 26, 90±5, 68 respectively; P=0, 342) and gestational age at delivery (28, 08±2, 66 versus 28, 78±2, 15 respectively; P=0, 136) were similar between the groups. Intraventricular hemorrhage were more common in control group compared with the MgSO4 group (7/61 (11, 4%) versus 3/46 (6, 5%); p= 0, 049). There were no statistically significant difference in intraventricular hemorrhage grade between the groups (p=0, 910). Neonatal hypotonia (4 (8, 7%) versus 0 (0%) respectively; P=0, 032), retinopathy of prematurity (12 (26, 1%) versus 6 (9, 8%) respectively; P=0, 040) and neonatal death (17 (37%) versus 9 (14, 8%) respectively; P=0, 015) were more common in MgSO4 group. For the periventricular leukomalacia (1 (2, 2%) versus 0 (0%) respectively; P=0, 430), neonatal convulsion (1 (2, 2%) versus 3 (4, 9%) respectively; P=0, 630) and neonatal ensefalopathy (0 (0%) versus 1 (1, 6%) respectively; P=0, 570), no substantial differences were seen between the groups.

Conclusion
In this study we demonstrated the effect of MgSO4 for fetal neuroprotection on maternal and neonatal outcomes of pregnant delivered before 32 weeks. The results of this study suggest that MgSO4 treatment for fetal neuroprotection has beneficial effect on intraventricular hemorrhage rate but there was no significant difference on the grade of IVH and on the rate of periventricular leukomalacia. The widespread use of prenatal MgSO4 for the purpose of fetal neuroprotection before 32 weeks of pregnancy at a standard dose protocol could improve the neonatal neurological outcomes.