Objective
Identify applications and utility of serum markers dosed in the first trimester in predicting, early diagnosis and management of various complications of pregnancy.

Methods
Eight hundred and eighty patients were included in this prospective study done regionally in the governorate of Bizerte in northern Tunisia in collaboration between the private and public sectors. Serum markers of the first quarter, PAPP A and bHCG, were measured in the same laboratory. The performance of these markers was studied in the prediction of adverse pregnancy complications.

Results
The prevalence of various pregnancy complications was 8.6% for birth prematurely, 9.2% for hypertension or preeclampsia, IUGR 5.8% and 7.3% for loss pregnancy. PAPP A levels were lower in fetal loss group (P = 0.005), vascular disease group (P = 0.001) and preterm delivery group (P = 0.001). In addition, a lower rate of bHCG was associated with the occurrence of placental pathologies such as growth retardation (P = 0.037) and hypertension (P = 0.034) and appears to have no predictive value in the occurrence of preterm birth (P = 0.76) and fetal loss (P = 0.189). Logistic regression analysis showed a significant predictive value of these markers.

Conclusion
Serum markers of the first trimester appear to have adequate predictive validity of adverse pregnancy complications. A risk predictive model could be designed based on these markers and involving maternal and ultrasound features in order to target prophylactically a high risk population.