

ACCELERATED CLOTTING TIME (ACT) AS A DETERMINANT OF FOETAL MATURITY

SUNANDA R. KULKARNI

SUMMARY

Accelerated Clotting Time (ACT) was performed on amniotic fluid samples of 100 pregnant patients of 24-42 weeks or more gestation with a reliable menstrual history. Results were compared clinically and ultrasonographically. ACT less than 120 sec was the criteria taken for foetal maturity. ACT is cheap, rapid and reliable simple test and requires no technical expertise.

INTRODUCTION

In order to reduce neonatal morbidity and mortality, it is imperative to assess foetal maturity, especially where LMP is not known, to ensure better intranatal and neonatal care.

MATERIALS AND METHODS

ACT was performed on amniotic fluid of 100 pregnant patients at Vani Vilas Hospital, Bangalore, in the year 1993, January to December. Samples were collected through vaginal route from sterile disposable no. 18 needle with syringe

before artificial rupture of the membranes, in active phase of labour.

To perform the test, 1.5 ml of patients blood was drawn and 1 ml of clear amniotic fluid was added to it in a dry test tube. Tube was tilted every 5 sec. to measure the clotting time of the mixture. 2.5 ml of blood was collected in another test tube which acted as control. The clotting time of the first test tube with amniotic fluid was taken as the accelerated clotting time. ACT less than 120 sec suggested a mature fetus 37 weeks or more. The transitional zone for ACT ranged from 115 to 135 seconds.

Table I shows mean ACT and gestation period in weeks of 100 cases. The ACT

Dept. of Obst. & Gyn. Vani Vilas Hosp. Bangalore.

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OBSERVATIONS

Table I

Period of gestion	No. of cases	Range	ACT average	Birth Weight average
24-32	20	130-365	240	1.8
33-36	30	80-190	150	2.0
37-40	40	30-140	78	2.6
41 & above	10	30-90	60	2.7

value has decreased as the gestation period has increased. There is a marked reduction of ACT after 40 weeks. The mean ACT decreases as birth weight increases.

There were 10 cases of false ACT 2 were false-positive and 8 false-negative; 4 out of 8 were in transitional zone thus leaving behind only 4 absolute errors. Out of 4, 2 had meconium stained liquor, 1 had blood stained liquor and 1 was a case of hydramnios. These false ACT results suggest that ACT is relatively unreliable in contaminated samples.

DISCUSSION

Thromboplastins activity of amniotic fluid increases with gestation, thromboplastins being liberated by desquamated, degenerated lysed foetus cells. The

estimation of amniotic fluid ACT in vitro test demonstrates that the maternal blood clotting mechanism is delayed on adding amniotic fluid. Larger amount of thromboplastins are available in advancing pregnancy from the big baby resulting in lower value of ACT.

CONCLUSION

ACT is simple, reliable, quick, bedside test that does not require many complicated instruments and expertise. ACT is useful in both normal and complicated pregnancies.

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