Charak dhar DIAGNOSTICS Pvt. Ltd.

292/05, Tulsidas Marg, Basement Chowk, Lucknow-226 003
Phone : 0522-4062223, 9305548277, 8400888844
9415577933, 9336154100, **Tollfree No.**: 8688360360
E-mail : charak1984@gmail.com
CMO Reg. No. RMEE 2445133
NABL Reg. No. MC-2491
Certificate No. MIS-2023-0218

Patient Name	: Ms.SONI DEVI	Visit No	: CHA250042237
Age/Gender	: 34 Y/F	Registration ON	: 09/Mar/2025 08:54AM
Lab No	**: 10139532**	Sample Collected ON	: 09/Mar/2025 10:55AM
Referred By	: Dr.ESIC HOSPITAL LUCKNOW	Sample Received ON	: 09/Mar/2025 11:09AM
Refer Lab/Hosp	: ESIC HOSPITAL LUCKNOW	Report Generated ON	: 09/Mar/2025 02:23PM
Doctor Advice	: QUAD TRIPLE,USG TIFA STUDY		

PR.

Test Name	Result	Unit	Bio. Ref. Range	Method
QUAD TRIPLE				
CLINICAL DETAILS				
Date of Birth	18/03/89			
AGE AT TERM	36.3 Years			
MATERNAL WEIGHT	60.0 Kg			
GESTATIONAL AGE	21 WEEKS 3 DAYS			
USG SCAN DATE	09/03/25			
PREVIOUS TRISOMY	NO			
PREGNANCY	SINGLE			
DIABETES MELITUS	NO			
SMOKING	NO			
IVF	NO			
RESULT OF MEASURED VALUE,RISK VALUE				
MOM AFP	1.13			
MOM ESTRIOL, UNCONJUGATED	1.30			
MOM HCG	0.69			
MOM INHINBIN A	1.21			
RISK FACTOR				
AGE RISK AR TERM	1:320			
RISK FOR TRISOMY 21	1:16800			
RISK FOR TRISOMY 18	1:51600			
RISK FOR NTD	1:5150			
Result	Negative			

INTERPRETATION:-

Maternal serum AFP. hCG and uE3 levels in various disorders

Disorder	AFP MOM	HCG Mom	uE3 MoM
Open Spina	High	Normal	Normal
Anencephaly	High or very high	Normal	Very Low
Down Synd	Low	High	Low
Trisomy 18	Low	Low	Low
Tri 21 & NTD	High or Low	Low	Low
Hydrops feta	Normal	High	Low
Turner Synd	Normal	High	Low
Fetal Demis	High or Low	High or Very Low	Very High

[Checked By]

Print.Date/Time: 09-03-2025 14:55:11
*Patient Identity Has Not Been Verified. Not For Medicolegal

DR. NISHANT SHARMA
PATHOLOGIST

DR. SHADAB
PATHOLOGIST

Dr. SYED SAIF AHMAD
MD (MICROBIOLOGY)

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Cut offlevels in various disorders and detection rate

ABNORMALITY	CUT OFF DETECTION RATE (MOM)	FALSE POSITIVE
NTD	≥2.5 70-75%	2-4%
TRISOMY- 21	1:270	65% 5%
TRISOMY -18	1:100	60% 0.30%

Introduction , clinical significance and interpretation of quad screen

The Triple marker screen is a group of four tests (AFP, hCG and unconjugated estriol) that are used as a screening test for certain fetal abnormality in the second trimester(14-22 wks) of pregnancy. The test evaluate the risk that a fetus has certain abnormalities, including Down syndrome (trisomy 21) , Edwards syndrome (trisomy 18) , and neural tube defects such as spina bifida or a condition called anencephaly.

Alpha-fetoprotein (AFP) is a protein produced by fetal tissue. During development, AFP levels in fetal blood and amniotic fluid rise until about 28 weeks, and then levels gradually fall until birth. Some AFT crosses the placenta and appears in the maternal blood. An AFP test may be performed by itself to test for neural tube defects , especially when risk for chromosomal abnormalities [Down syndrome and Edwards syndrome] have already been assessed using First trimester screening .(10-14 wks).

Human chorionic gonadotropin is a hormone produced by the placenta. Levels in maternal blood rise for the first trimester of pregnancy and then decrease during the remainder of the pregnancy.

Unconiugated estriol (UE3) is a form of estrogen that is produced by the fetus through metabolism . This process involves the liver, adrenals , and the placenta. Some of the unconjugated estriol crosses the placenta and can be measured in the mother's blood. Levels rise around the 8th week and continue to mcrease until shortly before delivery.

These tests have been established as a triple marker screen use mathematical calculation involving the levels of these 3 substances (AFP, hCG and unconjugated estriol) and considerations of maternal age, family history, weight, race, and diabetic status are used to determine a numeric risk for Down syndrome and for a few other chromosomal abnormalities such as Edwards syndrome [Trisomy 18) in the fetus. This risk is compared with an established cut-off. If the risk is higher than the cut-off value, then it is considered a positive screening test or increased risk exists for carrying a fetus with one of the discussed abnormalities.

What is Down syndrome?

Down syndrome (D5) is a chromosomal abnormality, also called Trisomy 21, that affects about 1 in 800 live births. People with DS have an extra copy of part or all of chromosome Z1. Most affected children have some retardation of growth and development. The risk of carrying a fetus with Down syndrome increases with the mother's age, especially in women over 40 years old.

For more information, visit the National Down Syndrome Society.

What is a neural tube defect?

Neural tube defects are serious birth defects: the brain, spinal cord, or their coverings do not develop completely. There are three kinds of neural tube defects:

- Anencephaly : incomplete development of the brain and the skull.
- Encephalocele: a hole in the skull through which brain tissue protrudes.
- Spina bifida: the most common neural tube defect, in which the spine does not close properly during early pregnancy

For more information on spina bifida. visit the Spina Bifida Association 0fAmerica.

***** End Of Report *****

[Checked By]

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TARGETED IMAGING FOR FETAL ANOMALY (TIFFA)

All anomalies cannot be ruled out at this gestational age.

- LMP is 01/10/2024. GA by LMP : 22 weeks + 5 days.

- Single live intrauterine foetus is seen in variable lie with biometric measurement of: -
    - BPD 46 mm 20 weeks + 0 days
    - HC 180 mm 20 weeks + 3 days
    - BOD 33 mm 21 weeks + 5 days
    - AC 178 mm 22 weeks + 5 days
    - HL 33 mm 21 weeks + 3 days
    - ULNA 31 mm 22 weeks + 0 days
    - RADIUS 28 mm 20 weeks + 4 days
    - FL 36 mm 21 weeks + 5 days
    - TIB 31 mm 21 weeks + 5 days
    - FIB 30 mm 20 weeks + 6 days
- Mean gestational age is 23 weeks + 0 days (+/- 2 weeks).
- Foetal weight is approx. 577gms (± 84gms).
- EDD by CGA is approx. 06/07/2025 (on basis of present Sonographic age).
- Placenta is fundo-anterior wall. It shows grade-I maturity. No evidence of retro placental collection.

- **Amniotic fluid is increased. DVP measures 9.7cm.**
- Cervical length appears normal.

Foetal morphological characters

- Midline falx is seen. Foetal head shows normal cerebral ventricles. Anterior horn measures 5.6 mm. Posterior horn measures 7.1 mm. No evidence of hydrocephalus is noted. Cavum septum pellucidum and thalami normal. Posterior fossa shows normal bilateral cerebellar hemisphere. Cisterna magna is normal in size measuring 5.9 mm. Transcerebellar diameter 22 mm corresponding to 22 weeks 4 days.

P.T.O

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- Foetal face shows normal bilateral orbit with normal nose and lips, mandibular echo is seen normally. Nasal bone measures 7.3 mm.
- Foetal neck does not show any obvious mass lesion.
- Foetal spine appears normal in configuration. Cross sectional imaging shows normal trilaminar pattern. No evidence of mass / spina bifida is seen.
- Foetal chest shows normal heart lung ratio. Foetal heart shows normal position and ratio. 4 chamber foetal heart appears normal. No mass lesion is seen in chest. Bilateral diaphragms are normal.
- Foetal abdomen shows normal position of foetal stomach. Liver appears normal in position. Gall bladder is anechoic in lumen. Visualized bowel loops are normal. No evidence of abnormal dilatation / mass is seen in bowel.
- Foetal urinary bladder is moderately distended.
- Foetal both kidneys are normal in size, shape & echotexture. Both renal pelvises are normal.
- No evidence of dilated ureters is seen.
- Foetal umbilical cord is three vessels and shows normal insertion. No evidence of foetal abdominal wall defect is seen.
- Foetal limbs are normal. Bilateral femur, tibia and fibula, humerus and radius and ulna are normal in size.
- Bilateral foetal hands & foots are grossly normal.
- Foetal cardiac activity is regular, heart rate measuring 148/min.
- Foetal body and limb movements are well seen.

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OPINION:

- **SINGLE LIVE FOETUS WITH MEAN GESTATION AGE OF 23 WEEKS + 0 DAYS (+/- 2 WEEKS) WITH NO APPARENT CONGENITAL MALFORMATION.**
- **POLYHYDRAMNIOS**

Adv: OGTT with 75gms of glucose

Note:-- I **Dr. Atima Srivastava**, declare that while conducting ultrasound study of **Mrs. Soni devi**, I have neither detected nor disclosed the sex of her foetus to any body in any manner. All congenital anomalies can't be excluded on ultrasound.

- **Dedicated fetal 2D-echo is not a part of routine structural anomaly scan.**
- **Chromosomal / Genetic disorders cannot be ruled out by ultrasound.**

[DR. ATIMA SRIVASTAVA]
[MBBS, DNB (OBSTETRICS AND GYNAECOLOGY)]
[PDCC MATERNAL AND FETAL MEDICINE (SGPGIMS LUCKNOW)]

NOTE :

- Ideal gestational age for TIFFA is between 18-20 weeks POG.

Limitations of USG -

- USG has potency of detecting structural malformations in up to 60-70% of cases depending on the organ involved.
- Functional abnormalities (behavior/ mind/hearing) in the fetus cannot be detected by USG.
- Fetal hand and foot digits are difficult to count due to variable positions.
- Conditions like trisomy 21 (Down syndrome) may have normal ultrasound findings in 60% cases as reporting in literature. Serum screening **(double marker at 11-14 weeks/quadruple or triple test at 15-20 weeks)** will help in detecting more number of cases **(70% by triple test/87% by quadruple and 90% by double test).**
- Few malformations develop late in intrauterine life and hence serial follow up scans are equaled to rule out their presence.
- Subtle anomalies/malformations do not manifest in intrauterine life and may be detected postnatally for the first time. Surgically correctable minor malformations (cleft/lip/palate/polydactyly) might be missed in USG.

Clinical correlation is necessary.

[DR. ATIMA SRIVASTAVA]
[MBBS, DNB (OBSTETRICS AND GYNAECOLOGY)]
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Transcribed By: Purvi

***** End Of Report *****