

Investigating Foetal Outcomes in cases of increased Nuchal Translucency, in a District General Hospital

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BACKGROUND

Foetal development is carefully monitored throughout the course of pregnancy. NICE provides detailed antenatal pathway guidelines¹, to ensure proper management of mother and baby.

At around 11–13 weeks (in Wales) the ‘dating scan’ is performed as part of the initial screening tests, in which ultrasonography is used to take certain foetal measurements, which can be compared against the normal range of values.

Enlargements of the hypoechoic space posterior to the neck are recorded to be the **nuchal translucency**. Higher nuchal translucency measurements have been associated with an increased risk of various issues:

- Chromosomal abnormalities
- Poorly developed organs
- Pregnancy complications

Early identification of raised nuchal translucency is an important aspect of antenatal care, to better prepare for future potential consequences.

OBJECTIVES

This study aims to investigate the adverse outcomes and prognosis that is associated with nuchal translucency values over 3.5mm

- Analyse and evaluate clinical records taken from a District General Hospital (DGH) in the recent years
- Use an obstetric patient database, from those under the care of the DGH’s foetal medicine team
- Assess the hypothesis that the higher the nuchal translucency measurement, the greater the severity of issues seen during the pregnancy

METHODOLOGY

A retrospective analysis was performed on a cohort of patients from one District General Hospital. Records were accessed from fifty-eight individuals, across 2018–2021.

The inclusion criteria was patients whose recorded nuchal translucencies were over 3.5mm in the data scan, and sufficient clinical information was available. The data was collated and analysed to identify any patterns in the effects of high nuchal translucencies (NT) on:

- Combined screen tests, anomaly scans, growth scans, NIPT, cytogenetic investigations
- Cardiology input
- Delivery records and early post-natal problems

RESULTS

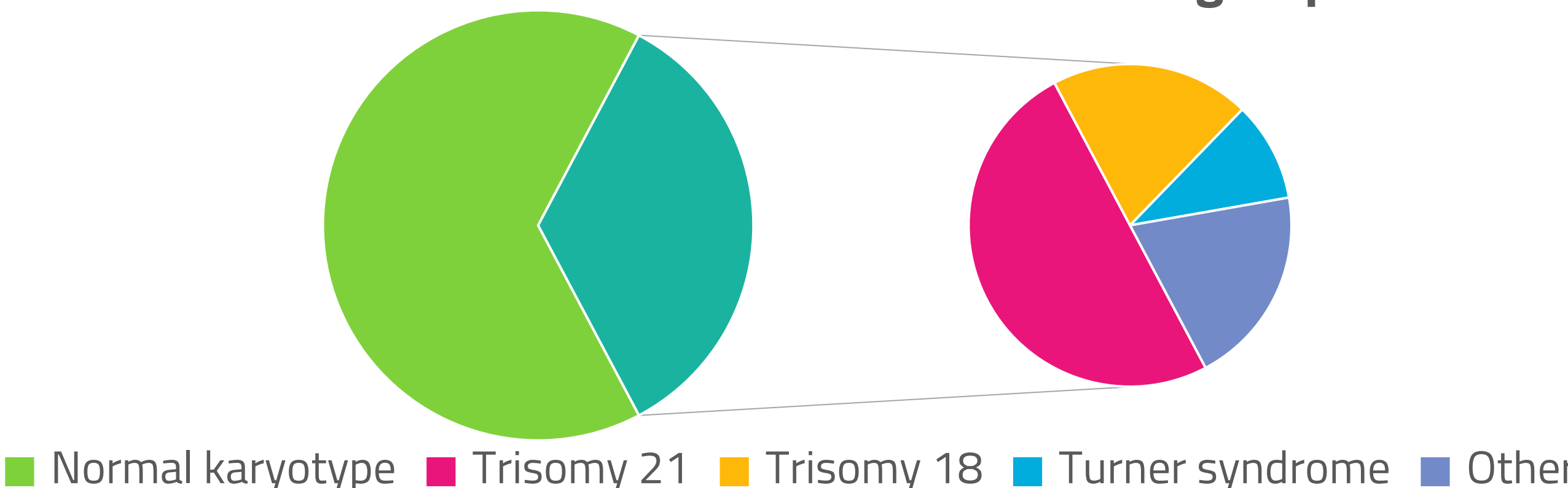
The data demonstrated a positive correlation between raised NT’s and adverse courses of pregnancy.

Down syndrome was highly prevalent, and cases of cystic hygroma and high NT was associated with low birthweight and poorer outcomes.

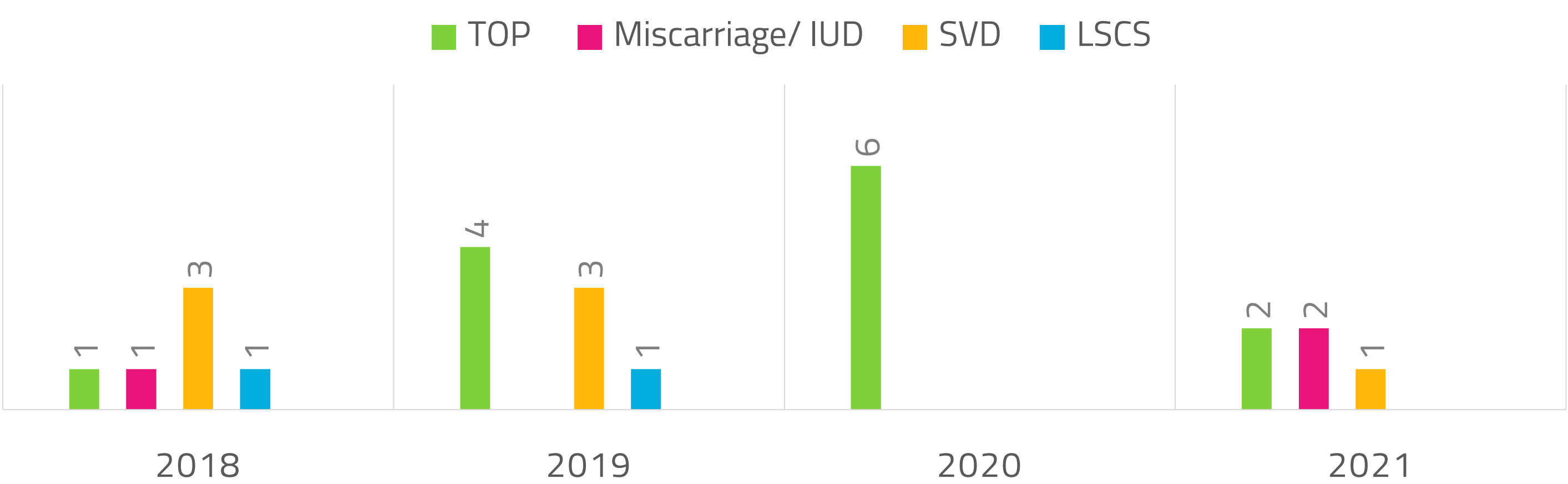
PARAMETER	NT 3.5-4.4mm	NT 4.5-5.4mm	NT >/=5.5mm or not taken
Irregular anomaly scan*	10.34	25	42.86
Cystic hygroma present	17.24	25	90.48
Abnormal growth	13.8	25	23.81
Cardiac defect	3.45	12.5	33.33
Chromosomal abnormality (e.g. Trisomy 21)	24.13	12.5	57.14
Birth issues (e.g. TOP)	17.24	12.5	19.05

*(excluding CH findings)

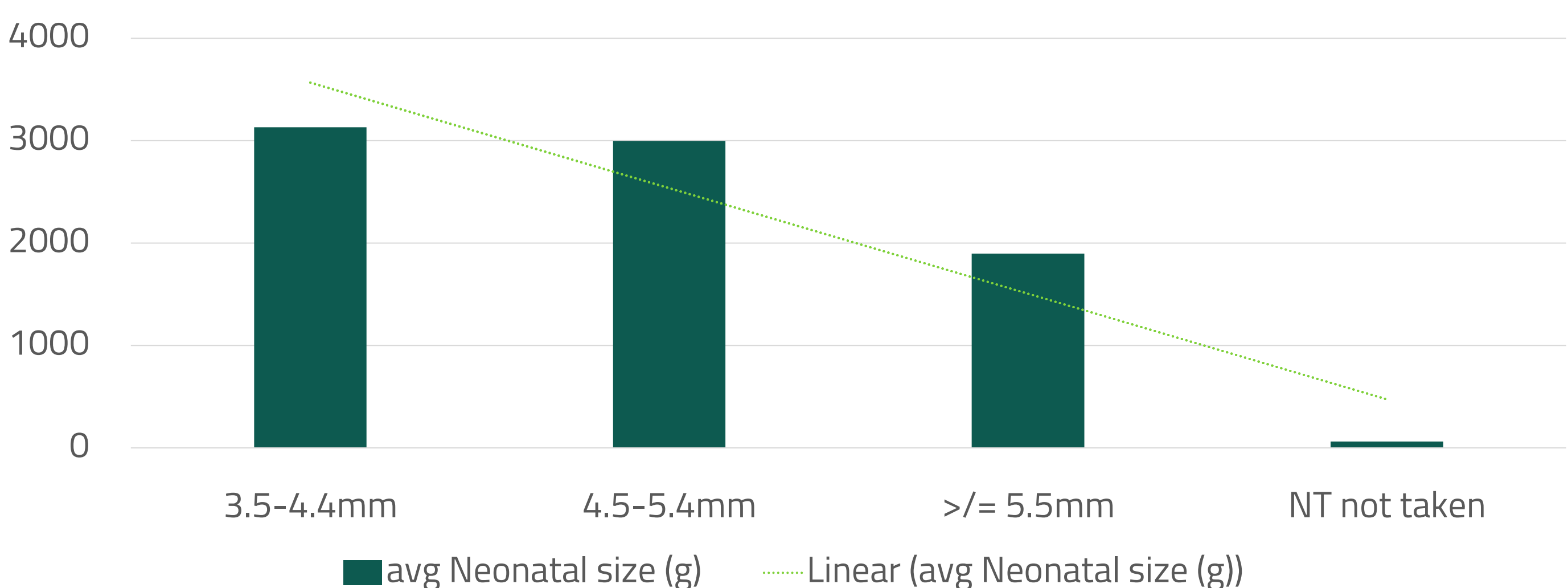
Chromosomal abnormalities in the Case group



PREGNANCY OUTCOMES IN CYSTIC HYGROMA CASES



Average Neonatal size according to the NT



DISCUSSION

Regarding the cohort, results support the theory that greater NTs are associated with worse prognoses, in differing aspects of foetal development, in a substantial proportion of the patients.

As a stand-alone study, more research is needed to better understand the amount by which specific increases in NT effect the foetus and the course of pregnancy, and what proportion of the general population would be affected.

As the cases from this DGH emphasized the increased likelihood of genetic variations, lower birthweights, and greater need for external medical and psychosocial support for families dealing with the impact of high foetal NT values. These findings corroborate prior work done on this topic², re-iterating the importance of offering screening services to all mothers³.

FUTURE RESEARCH:

The insight from this study offers further avenues upon which NT-based research can be continued. This could include the development of alternative support services for families, or more specific work on which developmental pathways and later medical problems are most likely dependent in foetuses with certain NT values.

ACKNOWLEDGEMENTS & REFERENCES

I would like to thank my supervisor, Dr Sivaprakasam, and the foetal medicine team for their help in completing my project.

1 - NHS Wales. Antenatal appointments. updated 2021. 02/07/2022. Available from: <https://111.wales.nhs.uk/LiveWell/Pregnancy/Antenatal%20appointments/#:~:text=8%20to%2014%20weeks%3A%20dating,possible%20conditions%2C%20including%20Down's%20syndrome>
2 - Shakoor S, Dileep D, Tirmizi S, Rashid S, Amin Y, Munim S. Increased nuchal translucency and adverse pregnancy outcomes. J Matern Fetal Neonatal Med. 2017 Jul;30(14):1760-1763. doi: 10.1080/14767058.2016.1224836.
3 - Ayras O, Tikkanen M, Eronen M, et al. Increased nuchal translucency and pregnancy outcome: a retrospective study of 1063 consecutive singleton pregnancies in a single referral institution. Prenat Diagn 2013;33:856–62, doi: [10.1002/pd.4143](https://doi.org/10.1002/pd.4143)