## Increased Nuchal Translucency in Congenital Heart Defects – associations with mortality

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#### **BACKGROUND & AIM**

- Nuchal translucency (NT) in first trimester is a widely used measure in prenatal screening.
- Increased NT is associated with congenital malformations, syndromes, and chromosomal abnormalities.
- Our aim; to investigate if increased NT is associated with higher mortality in children with congenital heart defect.

#### **METHODS**

- Nationwide study using the Danish Health Registers
- Identification of all live-born children with CHD 2008-2018
- Exclusion of non-singletons, chromosomal anomalies.
- NT at gestational week 11 13+6, first trimester screening
- Increased NT defined as  $NT \ge 95$ th centile

#### RESULTS

- 4469 children with CHD; simple CHD 3715 (83%) and complex CHD 754 17%).
- Increased mortality rate in simple CHD when NT > 95th centile vs. NT < 95th centile (HR 3.9, 1.3;11.4, p = 0.01)</li>
- In the combined group of CHDs, NT>95th centile compromised a larger proportion of mortalities (3.7 vs. 1.5 %, p = 0.01), but not associated to higher mortality rate (HR 1.8, 95%CI 0.9;3.8, p=0.1).

### CONCLUSION

Children with a simple CHD have a higher risk of mortality if having a NT <u>></u> 1.5 MoM.

# Is increased nuchal translucency associated with mortality in CHD?



Hazard Ratio for death in CHD with NT ≥95th–centile vs <95th centile

CHD	total	% of			
group	(n)	total			HR (95% CI)
All type CHD*	4469	100	-	•	1.8 (0.9, 3.8)
Simple CHD**	3715	83.1		•	3.9 (1.3, 11.4)
Complex CHD	754	16.9		•	1.1 (0.4, 3.1)
*Adjusted for severity of CHD **Adjusted for extracardiac anoma	lies		-1 0	1 2 3 4 3	10 12



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Mortalities in subgroups of CHD						
	All NT values	NT <u>&gt;</u> 95 <sup>th</sup> centile	NT <95 <sup>th</sup> centile			
Simple CHD, n (%)	3715 (83.1)	173 (72.4)	3542 (83.7)			
- Mortalities, n (%)*		<5 (.)	22 (0.6)			
Mortality rate (%)						
- 30 days	0.2	0.7	0.2			
- 3 months	0.3	0.7	0.3			
1 year	0.5	1.3	0.5			
- 5 year	0.7	2.4	0.6			
- Follow-up time						
(years), median (iqi)	6.5 (3.9;9.1)	2.8 (0.8;7.9)	6.5 (3.9;9.2)			
Complex CHD, n (%)	754 (16.9)	66 (27.6)	688 (16.3)			
Mortalities, n (%) <sup>*</sup>		<5 (.)	40 (5.8)			
<ul> <li>Mortality rate (%)</li> </ul>						
- 30 days	2.9	3.2	2.9			
- 3 months	4.0	3.2	4.1			
- 1 year	5.2	6.5	5.1			
5 year	5.7	6.5	5.7			
- Follow-up time						
(years), median (iqi)	6.0 (3.7;8.6)	6.3 (3.1;9.2)	6.0 (3.7;8.6)			

#### **Kaplan-Meier Survival Curve**



#### **Affiliations & Disclosures**

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