primary studies - published, non RCT

Pubertal Height Growth and Adult Height in Cystic Fibrosis After Newborn Screening.

Code: PM27244789 **Year:** 2016 **Date:** 2016 **Author:** Zhang Z

Study design (if review, criteria of inclusion for studies)

Historical cohort study

Participants

107 children born in 1985-1994 and followed through 2012

Interventions

Newborn screening (NBS)

Outcome measures

Adolescent peak height velocity (PHV), and adult height. PHV was estimated by a semiparametric growth curve model and compared with Tanner reference.

Main results

Meconium ileus (MI; n = 25) was associated with the worst pubertal growth and adult height, including 1 child who did not experience apparent PHV; children with pancreatic sufficiency (n = 18) achieved the best growth (normal PHV and adult height). In children with pancreatic insufficiency without meconium ileus (n = 64), the subgroup most likely to benefit from NBS, screened children had similar PHV but better adult height compared with controls. Specifically, in boys, the screened group (n = 22) achieved normal PHV (9.5 cm at 13.5 years); the control group (n = 19) had similar onset age (13.6 years) but 0.6-cm lower magnitude (P = .08). In girls, the screened group (n = 10) had somewhat later (12.5 years vs 11.7 years, P = .12) and lower PHV (7.3 cm vs 7.9 cm, P = .33) than the controls (n = 13), coinciding with later menarche (13.6 years vs 12.2 years, P = .10). Adult height was taller in the screened than the control (50th vs 29th percentile, P = .02), even after adjusted for genetic potential (32nd vs15th percentile, P = .006). Differences in adult height were primarily attributable to NBS and better prepubertal growth.

Authors' conclusions

Early linear growth benefits of NBS were sustained through puberty, leading to better adult height in cystic fibrosis.

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See also

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Keywords

Neonatal Screening; Newborn; non pharmacological intervention - diagn; screening; diagnostic procedures;