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Leuven
Specific language impairment is associated with maternal and family factors

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Language delay

› Primary developmental language disorders
  › Specific Language Impairment
  › SLI

› Secondary developmental language disorders

› Insufficient language input
Language delay

- Primary developmental language disorders
  - Specific Language Impairment
  - SLI

- Secondary developmental language disorders

- Insufficient language input
Specific Language Impairment

- Prevalence SLI
  - Range 2 – 12%
  - 7 % (Tomblin)

- ADHD 5%
- ASD 1%

Most common developmental disorder

Association between risk factors and SLI? 

insight into etiology of isolated developmental disorders
Literature on SLI and risk factors

Literature is sparse and contradictory

Review:
   US Preventive Services Task Force

Risk factors for SLI:
   • Family history
   • Male sex
   • Perinatal risk factors

Our study

› nested case control design

› cases
  › children from special needs school for children with severe speech and language difficulties (=SLI)

› controls
  › children attending regular education (= typically developing)

matched by date of birth and gender
Our study, cases

Special needs schools for children with severe speech and language difficulties

› strict criteria
› multidisciplinary teams
› government regulated

IQ > 85
difference between verbal and intellectual capacities > 1.5 SD
delays in ≥ 2 aspects of language skills

meeting internationally used criteria for SLI
Our study

› 506 children

› cases \((n = 253)\): children of a special need school for Severe Speech and Language difficulties (= SLI)

› controls \((n = 253)\): children from school of regular education matched by date of birth and gender

data from Well-child Health Care records
Our study

Dutch Preventive Well-child Care (95%)

- data were collected at home visit shortly after birth
- data registered before diagnosis SLI

less recall bias
Measures

From well-child care files:

- Prenatal, perinatal and postnatal risk factors
  - pregnancy, delivery characteristics

- Maternal and family circumstances
  - hypertension, use of medication, smoking and alcohol or drugs use during pregnancy, breastfeeding
  - age of parents, place in birth order of the child
# Results, pregnancy

<table>
<thead>
<tr>
<th></th>
<th>SLI group (n=253)</th>
<th>control group (n=253)</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestation (weeks)</td>
<td>39.7 (1.80)</td>
<td>39.4 (1.99)</td>
<td>0.19</td>
</tr>
<tr>
<td>Birth weight (g)</td>
<td>3440 (579)</td>
<td>3426 (633)</td>
<td>0.79</td>
</tr>
</tbody>
</table>

(S.D.)
## Results, delivery

<table>
<thead>
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<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of labour (h)</td>
<td>6.22 (7.01)</td>
<td>6.88 (8.53)</td>
<td>0.35</td>
</tr>
<tr>
<td>Expulsion (min)</td>
<td>21.3 (31.4)</td>
<td>21.5 (26.0)</td>
<td>0.92</td>
</tr>
</tbody>
</table>

(S.D.)
Results, perinatal factors

- Preterm birth: SLI group 8%, Control group 9%
- Small for gestational age: SLI group 11%, Control group 13%
- Non-spontaneous birth: SLI group 22%, Control group 27%
- Meconium staining: SLI group 20%, Control group 14%

The percentages are represented in a bar chart.
Results, Apgar scores

Apgar score after 1 min
- SLI group: 8.6
- Control group: 8.72

Apgar score after 5 min
- SLI group: 9.5
- Control group: 9.63

Red: Control group
Orange: SLI group
Results, age of parents

- **SLI group**
  - Age of father: 33.8 years
  - Age of mother: 30.75 years

- **Control group**
  - Age of father: 34.6 years
  - Age of mother: 31.75 years

* Statistically significant difference (p = 0.02)
Results, place in birth order

percentages

SLI group
control group

* Statistically significant difference
Results, being breastfed

- Statistically significant difference

Percentages:
- SLI group: 55%
- Control group: 71%

* Statistically significant difference
Conclusions

Risk factors for SLI

- Family history
- Male sex
- Perinatal factors
Conclusions

Risk factors for SLI

- Family history
- Male sex
- Perinatal factors

Protective factors

- Older mother
- Being the first born in the family
- Being breastfed directly after birth
B. Diepeveen F, van Dommelen P, Oudesluys-Murphy AM, Verkerk PH. Specific language impairment is associated with maternal and family factors. Child Care Health Dev 2017
Questions?

Thank you for your attention
Very preterm born (POPS):

- < 32 wks or < 1500 g

Literature perinatal factors

Very preterm born (POPS):

- < 32 wks or < 1500 g
- High risk of multiple developmental disorders
- Seldom isolated developmental (language) disorder