



Early diagnosis of coeliac disease by case-finding at the Preventive Youth Health Care Centers in the Netherlands (GLUTENSCREEN) Preliminary results



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BACKGROUND

Coeliac disease (CD) occurs in 1% of the population but is severely underdiagnosed. Undiagnosed and untreated disease is associated with short- and long-term complications. Secondary prevention by early diagnosis may be achieved by active case-finding.

GLUTENSCREEN is a case-finding project to detect CD in 12 months-4 years old symptomatic children attending the Preventive Youth Health Care Centers (YHCCs) in the region of Kennemerland, the Netherlands.

AIM

Our aim was to prospectively assess whether case-finding at the YHCCs is a feasible and effective strategy for early diagnosis of CD.

METHODS

We analyzed the data from GLUTENSCREEN; 4th February 2019 -14th November 2020 (with interruption of 5 months due to the COVID19 pandemic).

Parents of all children aged 12 months-4 years attending the YHCCs for a regular visit were asked if their child had one or more CD-related symptoms from a standardized list. If so, they were invited to participate in the case-finding study. A point-of-care test (POCT, BIOHIT Celiac quick test) to assess CD-specific antibodies against tissue-transglutaminase (TGA) from a droplet of blood, was performed onsite the YHCCs. If the POCT was positive, CD was highly suspected, and the child was referred to the hospital for definitive diagnosis according to the ESPGHAN guideline. Outcome was number (percentage) of children with a positive POCT in which the diagnosis of CD is confirmed.

Questionnaire

Questions Coeliac Disease (to fill in by the parent(s))

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| 1. Does your child suffer from abdominal pain longer than 3 weeks (at least twice a week)? | Yes / No |
| 2. Does your child have a distended abdomen? | Yes / No |
| 3. Is your child regularly constipated and not responding to laxation? | Yes / No |
| 4. Does your child have diarrhoea longer than 2 weeks? | Yes / No |
| 5. Does your child suffer from vomiting longer than 3 weeks (at least twice a week)? | Yes / No |
| 6. Is your child easily tired in a way he/she is limited in daily activities? | Yes / No |
| 7. Does your child have regularly aphthous stomatitis? | Yes/ No |
| 8. Is your child regularly irritated (longer than 3 weeks, at least twice a week)? | Yes / No |
| 9. Does your child eat gluten? | Yes / No |
| 10. Has your child been diagnosed with Coeliac Disease? | Yes / No |

To fill in by paediatrician / nurse

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| 11. Growth restrictions (height and /or weight)? | Yes / No |
| 12. Does the parents give consent to participate in the study? | Yes / No |
| 13. Is written informed consent available? | Yes / No |

RESULTS

10.635 children who attended the YHCCs, 3896 (36.6%) had CD-related symptoms.

Parents of 1923 (49.3%) gave informed consent for a POCT (48% female, median age 2.8 year (range 12-48). In 41 children (2.1%) the POCT was positive.

After additional investigation at our hospital:

- CD was confirmed in 38 children (2.0% of the tested children; IgA TGA \geq 10xULN and IgA EMA positive)
- CD was ruled out in 3 children with dubious/positive POCT; in 1 child had negative HLA-DQ2/8 and negative TGA in serum and in 2 children with TGA <10xULN small bowel biopsies showed no alterations.

CONCLUSION

Case-finding for CD using a POCT is effective and feasible at the YHCCs in the Netherlands and that it detects a high CD prevalence of 2% in the tested children. Before implementation of the case-finding strategy (on-going) cost-effectiveness and acceptability analyses are needed.