Priority target conditions of growth monitoring in children: toward consensus

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Disclosure statement: no conflict of interest

n°791

Background and objective

Growth monitoring (GM) of apparently healthy children aims at early detection of severe underlying conditions.(1) GM is based on clinical expertise that may be completed by the use of algorithms. Strong empirical evidence shows that current practices of GM are suboptimal. Practice standardization with validated tools requires answering two questions: Which conditions should be targeted? and How should abnormal growth be defined? To answer the first question, **our objective was to obtain a consensus on a "short list" of priority target conditions of GM by algorithms**.

Methods

A formalized consensus process has been used with an adapted RAND/UCLA method. It was based on 3 phases (preparatory, bibliographic, and rating) and involved 3 groups (piloting *n=11*, reading *n=8*, and rating *n=36*) of appointed experts from all French academic societies involved in the diagnosis and management of growth disorders, from primary care providers to experts in paediatric endocrinology, nephrology and gastroenterology, and members of parent associations. The ESPE list of paediatric endocrine diagnoses was used as a starting point.(2) Participants were asked to complete this list then to select conditions fulfilling 4 previously established criteria defining an ideal typology of priority target conditions of GM by algorithms:(1)

1. an "important health problem" in terms of their incidence and related morbidity and mortality,
2. a natural history including a long paucisymptomatic period during which the main clinical expression was auxological,
3. a high level of evidence for a relationship between early diagnosis and a more favourable outcome,
4. diagnosis criteria that are both robust and independent of auxological parameters that can be used to define abnormal growth.

Results

Phase	Number of conditions	Actions of the consensus groups
Preparatory	118 (ESPE list) → 133	Addition of conditions not listed in the ESPE list by the piloting group.
	133 → 15	Selection of the 15 target conditions with highest priority according to their own personal expertise by the piloting then the reading group.
Bibliographic	15 → 8	Verification of the presence of the 4 criteria and validation by the piloting group.
Rating	8 → 8	Rating and selection of priority target conditions with strong consensus by the rating group:

PRIORITY TARGET CONDITIONS OF GM BY ALGORITHMS	AGREEMENT (%)†
Growth hormone deficiency with pituitary stalk interruption syndrome	100
Turner syndrome	100
Craniopharyngioma	97
Nephronophthisis	92
Hypothalamic-optochiasmatic astrocytoma	91
Celiac disease	91
Crohn disease	91
Cystinosis	86

† % of experts agreeing that the condition fulfilled the 4 criteria

Conclusions

This national consensus has identified 8 priority target conditions of GM by algorithms. It will now be used to (1) build a trans-speciality European consensus and (2) refine and optimize the current algorithms proposed to define abnormal growth.

References

(1) Scherdel et al. Lancet Diabetes Endocrinol 2016

(2) Wit et al. Horm Res 2007

55ESPE 3--6-RFC

Pituitary

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DOI: 10.3252/pso.eu.55ESPE.2016

Poster presented at: ESPE 2016 PARIS