Iron deficiency prevalence at 24 months of age: a prospective study in the general population in France

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Background

- The European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) has recently pointed out the lack of population-based evaluations of iron deficiency (ID) prevalence in children in Europe [1]
- **Our aim was to estimate ID and ID anemia (IDA) prevalence in France at 24 months-old in the general population**

Methods

- In a prospective study conducted in 19 French regions from 2016 to 2017, 56 primary-care pediatricians included consecutively, after parental consent, 24 months-old infants living in France, without acute condition or chronic illnesses interacting with iron metabolism, notably inflammation (CRP <10 mg/L)
- ID was defined by a serum ferritin (SF) level <10 or <12 µg/L, measured by micro-particle enzyme immunoassay, and IDA by a hemoglobin level <11 g/dL in case of ID

Results

- Among the 555 participants, mean age was 24 months, 49% were girls, and 7% had a family health coverage fully funded by a public grant
- **ID prevalence for <10 and <12 µg/l SF thresholds was 4.1% (95% confidence interval -CI-: 2.6-6.2) and 6.7% (95% CI: 4.7-9.1), respectively** (Figure)
- Anemia and IDA prevalence was 3.1% (95% CI: 1.8-4.9) and 0.6% (95% CI: 0.1-1.6), respectively (Figure)

Figure 2. SF and hemoglobin levels distributions among 2 years-old children, prevalence of ID and IDA (threshold of serum ferritin level < 10 µg/l and hemoglobin level < 11 g/dl respectively, materialized by the dotted lines)

Conclusion

- The prevalence of ID found was much lower than those of previous French studies among disadvantaged populations, but close to those of French [2] and European studies in general population [3]
- The contribution to this encouraging finding of the national prevention strategy recommending the prolonged use of iron-fortified formula at diversification in case of breastfeeding cessation should be explored (see Short Oral Session 02: Iron-Fortified formula rate of use in young children and association with sociodemographic factors in France: results from the ELFE national birth cohort)

Références: 1. Domellof J *Pediatr Gastroenterol Nutr* 2014, 2. Sacri *Matern Child Nutr* 2018, 3. Eussen *Ann Nutr Metab* 2015

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