Prevention of Neural Tube Defects by Periconceptional Folic Acid Supplementation in Europe: Summary of EUROCAT Special Report

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Background

Approximately 4000 pregnancies every year in Europe result in a livebirth, stillbirth or termination of pregnancy of a baby/fetus affected by Neural Tube Defects (NTD), mainly anencephaly and spina bifida. Periconceptional folic acid supplementation has been shown over a decade ago to be an effective method of preventing potentially two thirds of cases. In this Report we review progress in the last decade in European countries in terms of developing and implementing public health policies to raise periconceptional folate status, and analyse data on the prevalence of neural tube defects from 36 congenital anomaly registries in 17 countries to determine the extent to which neural tube defects have been prevented up to the year 2000.

Methods

EUROCAT is a network of 36 congenital anomaly registries in Europe collaborating in the epidemiological surveillance of congenital anomalies. Representatives from seventeen countries participating in EUROCAT provided information about policy, health education campaigns and surveys of folic acid supplement uptake in their country. NTD rates (including livebirths, stillbirths and terminations of pregnancy following prenatal diagnosis) were extracted from the EUROCAT Central Registry database for 1980–2000.

Results

At the beginning of 2002, an official governmental recommendation that women planning a pregnancy should take 0.4 mg of folic acid supplementation daily was in operation in nine of the seventeen countries. The earliest countries to introduce an official supplementation policy were the UK, Ireland and Netherlands in 1992–1993 and the latest were Spain and France in 2000–2001. In the remaining eight participating countries, no official government recommendation about supplementation was in place; however, professional bodies within a subset had in fact recommended supplementation, and two countries had an official policy of encouraging women to increase their dietary intake of folate periconceptionally. Only seven countries had official health education initiatives: UK, Ireland, France, Poland, Netherlands, Norway and Denmark. Despite all measures taken to date, the majority of women in all countries surveyed are not taking folic acid supplements periconceptionally. The situation regarding low uptake of supplementation advice is reflected in the lack of a clear decline in the prevalence of neural tube defects across Europe. Nevertheless, there was some evidence that in countries with a supplementation policy, a small decline in prevalence had taken place. In the UK and Ireland, it was difficult to distinguish any effect of supplementation policy against the background of a strongly declining NTD prevalence throughout the 1980s, predating folic acid advice.

Conclusion

The potential for preventing NTDs by periconceptional folic acid supplementation is still far from being fulfilled in Europe. Only a public health policy including folic acid fortification of staple foods is likely to avoid widening socioeconomic inequalities in NTD prevalence and to result in large-scale prevention of NTDs.

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Recommendations

EUROCAT data reveal the lack of substantial decline in neural tube defect prevalence in Europe in the last decade. Even countries which have pursued supplementation policies relatively actively have found a limited preventive impact. Therefore, EUROCAT strongly recommends the following:

1. Countries should review their policies regarding folic acid fortification and supplementation, keeping abreast of any WHO Europe recommendations which are published.
2. European countries could prevent most neural tube defects in planned pregnancies by putting in place an official policy recommending periconceptional folic acid supplementation and taking steps to ensure that the population are aware of the benefits of supplementation and the importance of starting supplementation **before** conception.
3. As many pregnancies are unplanned, European countries could achieve more effective prevention of neural tube defects by additionally introducing fortification of a staple food with folic acid. The particular objectives of this policy would be preventing neural tube defects among women who do not plan their pregnancy, and reducing socioeconomic inequalities in neural tube defect prevalence.
4. Health effects of supplementation and fortification should be monitored, and policies should be reviewed periodically in light of the findings.
5. The European population should be covered by high quality congenital malformation registers which collect information about affected pregnancies (livebirths, stillbirths and terminations for fetal abnormality). One important use for the information would be to assess the effect of folic acid supplementation and fortification on NTD rates as well as rates of other congenital malformations.

Reference and Website for the full report

EUROCAT Working Group. EUROCAT Special Report: Prevention of Neural Tube Defects by Periconceptional Folic Acid Supplementation in Europe. May 2003. www.eurocat.ulster.ac.uk/pubdata/folic%20acid.html

Acknowledgements

This is a translation of the Summary and Recommendations produced by the EUROCAT Working Group. The work was funded by the Rare Diseases Programme of the Public Health Directorate of the European Commission.

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