

Neural tube defects: how many cases could have been prevented in Portugal?

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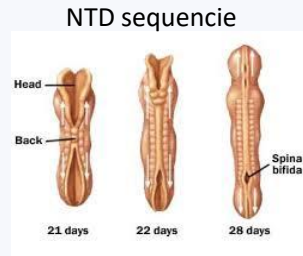
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Background

Neural tube defects (NTD) occurs when the neural tube does not close properly until the 28th day of foetal life.



70% of NTD can be prevented when women start folic acid (FA) before pregnancy and until the end of 1st trimester.

Aims: describe FA intake and estimate the number of cases that would have been prevented if FA intake started before pregnancy as recommended.

Methods

- Cross-sectional study; data from the National Registry of Congenital Anomalies; 2004-2017.
- Temporal evolution of the beginning of FA intake: Cochran-Armitage test for proportions.
- The proportion of preventable cases was estimated considering the 70% prevention fraction and the number of NTD cases registered in RENAC that occurred in pregnancies without the recommended FA supplementation.

Conclusions

202 NTD cases could have been prevented if all women had started FA before pregnancy.

Primary prevention of NTDs should be encouraged with measures that promote periconceptional FA supplementation.

Results

On average, 13.8% of all women started FA before pregnancy, 46.2% during 1st trimester and 6.1% did not take folic acid.

A statistically significant trend ($p < 0.001$) was observed in the group that started before pregnancy with increase from 6.8% in 2004 to 17.9% in 2017 (Figure 1).

Results

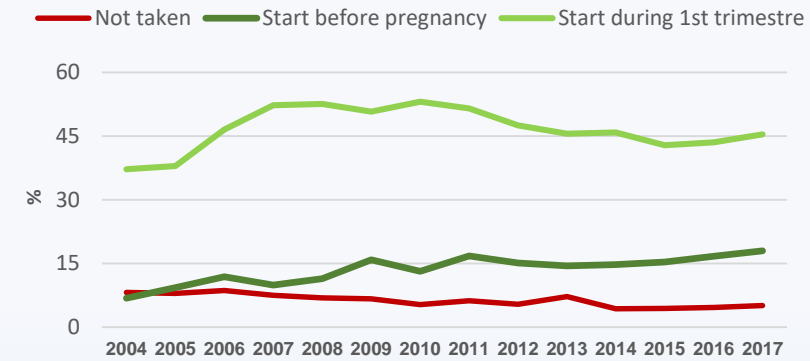


Figure 1. Use of folic acid between 2004 and 2017

The prevalence of NTD was 4.2 cases/10,000 births, ranging from 2 cases/10,000 births (2007) to 7 cases / 10,000 births (2014).

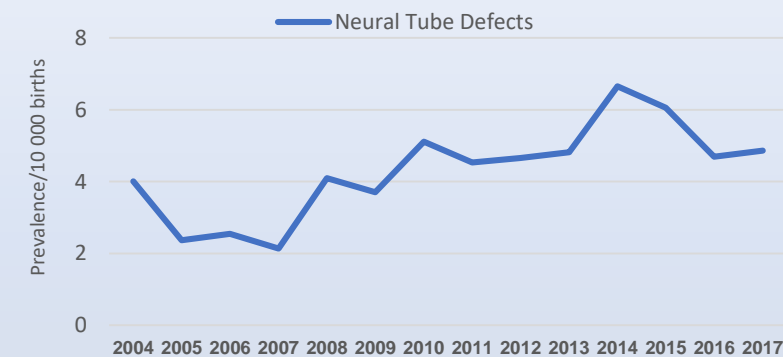


Figure 2. Prevalence (/10,000 births) of NTD between 2004 and 2017

If all women had started FA before pregnancy, an estimated 202 NTD cases could have been prevented.