

Oral presentation

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## Neural tube defects in 21st century: is Northern Ireland changing?

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### Background

Neural tube defects (NTD), which include spina bifida, anencephaly, and encephalocele, are an important group of severe birth defects whose prevalence has fallen significantly in past few decades in many countries. Northern Ireland (NI) is known to have the highest prevalence of neural tube defects (NTD) in Europe. The prevalence rate of 60 and 40 per 10,000 births was reported in 1970's and 1980's, respectively. However no NI data has been published since then to assess the trend of decline in NTD prevalence as noted in other previously high prevalent regions of UK and Ireland. The aims of the study were (1) To describe the current epidemiology of NTD in Northern Ireland (2) To assess the impact of prenatal diagnosis on the birth prevalence of spina bifida and anencephaly (3) To compare the current prevalence, antenatal diagnosis and termination trend with previously published reports from the province (3) To compare the current NI data with rest of UK and Europe for the same period.

### Materials and methods

Total births, all births and terminations of pregnancy affected with NTD in the province were ascertained for the study period 2000-2004. The relevant information regarding maternal age, family history, maternal folate intake, antenatal versus postnatal diagnosis and genetic investigations was obtained, crosschecked and analysed. The data was compared with the published figures for the same period from rest of UK and Ireland and with the data published by EUROCAT.

### Results

Total prevalence rate of 10.24 and birth prevalence rate of 4.66 per 10,000 births was noted for NTD in Northern Ireland. The fall in total prevalence and birth prevalence of NTD is highly significant. Eighty four percent cases of neural tube defects were diagnosed antenatally leading to termination of pregnancy in 30% and 83% cases of spina bifida and anencephaly respectively. Contrary to previously published reports we noticed male predominance in spina bifida cases in our NTD cohort.

### Conclusion

This study shows that NI does not have the highest prevalence of NTD as noted in the past and the prevalence rate is reduced to 1 in 1000 births. This prevalence rate is in keeping with the trend noted in other UK and Irish centres during the same period. Over four fifths cases were diagnosed antenatally and the antenatal diagnosis has made significant impact on the birth prevalence of neural tube defects.