

## The impact of first and second trimester screening on the rate of feticide

Theresa Reischer, Katrin Niedermaier, Christian Göbl, Anja Catic, Gülen Yerlikaya-Schatten  
Medical University of Vienna, Vienna, Austria

### Objective

Over the last decades developments in the field of prenatal medicine lead to the diagnosis of a steadily growing spectrum of fetal malformations and genetic disorders. Aim of the study was to determinate the influence of prenatal ultrasound screening methods on the time of diagnosis and therefore the rate of feticide in pregnancies with fetal malformations and genetic disorders.

### Methods

Retrospective data analysis of terminations of pregnancies (TOP) with and without feticide due to fetal structural anomalies or genetic abnormalities at a single tertiary care referral center in Europe between 2007 and 2020.

### Results

Overall 965 TOPs due to fetal malformations or genetic disorders were recorded, whereas 750 women had TOP without feticide and in 215 cases feticide was performed. Over these years the number of TOPs increased and a non-significant rise on the rate of feticide was observed. Median gestational age at diagnosis was lowest in pregnancies with first trimester screening (14.6 WoP), and highest in cases without any ultrasound screening (25.0 WoP. ) Women, who underwent TOP without feticide significantly more often had first trimester screening. In particular, 588 (86%) cases compared to 121 (57%) with feticide ( $p < 0.001$ ). Furthermore, in the subgroup of cases diagnosed after 20 WoP a significant association between cases without second trimester anomaly scan and TOP with feticide was found. Gestational age at diagnosis was influenced by the type of malformation and therefore the affected organ system. Late diagnosis and highest rates of feticide were observed in cases of brain malformations and heart defects or complex fetal malformation affecting more than one organ systems.

### Conclusion

In conclusion, the present study highlights the importance of prenatal ultrasound screening methods, especially of the first trimester screening to avoid unnecessary late termination of pregnancy or even feticide. While due to the improvement of prenatal diagnosis early prenatal diagnosis might be achieved and feticides might be prevented, the availability of precise ultrasound diagnosis, additional MRI and advanced genetic analysis might lead to continuous increase of TOP in the future.