Progression risk after pregnancy in patients with glioma

Objective
A significant proportion of women with diffuse gliomas are diagnosed in childbearing-age, resulting in the desire of patients to fulfil their family dream. However, data on glioma progression after and during pregnancy are sparse and controversial.

Patients and Methods
In total, 159 female adult patients in their reproductive years (≥18 and <46 years) with histopathological diagnosis of WHO grade 2 or 3 glioma from 2 academic centres between 01/01/2000 and 01/01/2019 have been included in the study. Diagnosis was updated according to WHO classification of CNS Tumours 2021 by a board-certified neuropathologist (Table 1). Association of pregnancy and glioma progression was assessed in a time-dependent manner. The following parameters were included in the multivariate analysis: ECOG, extent of resection, WHO grading, adjuvant therapy after surgery, pregnancy after diagnosis.

Results
Of 159 women after a median follow up period of 127.4 months (mo), median overall survival (OS) and progression free survival (PFS) was 247.6 months (mo) (95 % CI 155.7 – 339.5) and 67.9 mo (95 % CI 60.1 – 75.7), respectively (Figure 3A, Figure 3B).

Figure 1 shows the proportion of defined patient groups (Nullipara, Pirmi/Multipara before glioma diagnosis and Primi/Multipara after glioma diagnosis). Figure 2 demonstrates patient groups according to WHO classification of CNS Tumours 2021.

In multivariate time-dependent analysis, pregnancy after diagnosis in comparison to nullipara or pregnancy before diagnosis was associated with shorter PFS (p ≤ 0.05) (Figure 4A), but not with shorter OS (p>0.05) (Figure 4B).

CONCLUSION
In our real-life cohort of females with gliomas, we observed that pregnancy after glioma diagnosis is associated with tendency to shorter PFS but not OS. Longer follow up as well as larger cohorts are needed to investigate a potential impact on OS.