Pregnancy Outcome after Erenumab Treatment during early Pregnancy: a Case Series

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Introduction

Migraine is one of the most common neurological disorders, often affecting women of childbearing age. The IgG_2 monoclonal antibody erenumab belongs to the newest class of substances used for migraine prophylaxis. It is an antagonist of the calcitonin gene-related peptide (CGRP) receptor and is administered once monthly as a subcutaneous injection due to its long half-life of 28 days. CGRP is a key mediator in the pathophysiology of migraine, acting as a nociceptive modulator and vasodilator. There is limited experience with the use of erenumab during pregnancy [1-3].

Methods

This case series includes all requests for erenumab exposure to TIS Berlin until February 2023 with a completed follow-up. We evaluated the outcomes of 14 prospectively ascertained pregnancies, including one twin pregnancy. Birth defects were classified as major or minor according to EUROCAT Guide 1.5.

Results

- Outcome of 14 pregnancies, including one twin pregnancy: Two spontaneous abortions occurred. One pregnancy was terminated electively due to personal reasons. Six girls and six boys with a median birth weight of 3160 g were delivered at a median gestational age of 39 weeks. None of the 12 live-born infants presented with major birth defects. One of the twins was diagnosed with a congenital umbilical hernia and an infantile haemangioma, which are defined as minor malformations according to EUROCAT (#06).
- Maternal characteristics: Median maternal age was 35 years and median BMI was 21. In the majority of pregnancies (92.9%), no cigarette or alcohol misuse was reported. More than half of the patients (57.1%) had at least one previous parity.
- Duration of exposure: Six women had already stopped treatment with erenumab in the preconception period, some however very shortly before conception. In the other cases treatment was discontinued after recognition of pregnancy at a median gestational age of 5 weeks after last menstrual period. The latest administration of erenumab was at week 12+4.
- Dosage: Four women were treated with 70 mg/month, five with 140 mg/month. Dosage was unknown in five cases.
- Co-medication: Triptans were used frequently as on-demand medication, mostly sumatriptan. One woman discontinued her migraine prophylaxis with topiramate at 4 weeks after the last menstrual period (#06). Five women additionally used amitriptyline as migraine prophylaxis.

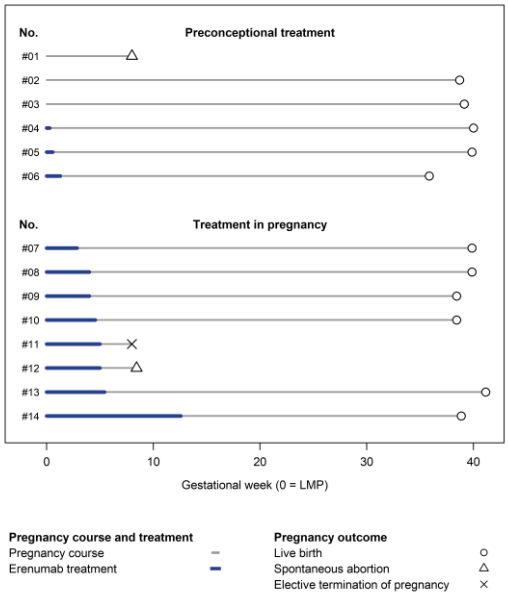

Figure legend: Duration of erenumab treatment during pregnancy and outcome of 14 prospectively ascertained pregnancies, including one twin pregnancy (#06).

Conclusion

The results of our case series do not indicate an increased risk of adverse pregnancy outcome after erenumab exposure during the first trimester. However, data is still very limited and further studies are needed. Evidence from in-vivo and ex-vivo studies suggests that CGRP plays an important role in several physiological processes, including development and adaptation of the vascular systems in the uterus, placenta and fetus [4-5]. Based on the currently available information, the use of erenumab during pregnancy should be avoided. The long half-life of 28 days must be kept in mind when counseling women who are planning a pregnancy.

References

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