

No increase in brain aneurysm rupture risk during pregnancy and delivery

February 7 2013

For women with aneurysms involving the brain blood vessels, pregnancy and delivery don't appear to increase the risk of aneurysm rupture, reports a paper in the February issue of [Neurosurgery](#), official journal of the Congress of Neurological Surgeons.

The study also finds that women with known, unruptured [aneurysms](#) have a very high rate of cesarean delivery—which isn't supported by evidence and "may not be necessary," according to Dr. Brian L. Hoh of University of Florida, Gainesville, and colleagues.

Pregnancy Doesn't Increase Risk of Aneurysm Rupture

The researchers used a national hospital database (the Nationwide Inpatient Sample) to estimate the risk of [brain aneurysm](#) rupture during [pregnancy](#) and delivery. An aneurysm is a weakened spot in a [blood vessel wall](#). If the aneurysm enlarges or ruptures (breaks), it can cause life-threatening bleeding in the brain.

The database identified 714 women hospitalized for [ruptured aneurysm](#) during pregnancy and 172 during delivery between 1988 and 2009. Based on an estimated rate of 1.8 percent among women of childbearing age, Dr. Hoh and colleagues calculated that, across the United States, approximately 49,000 women with unruptured aneurysms were hospitalized during pregnancy and 312,000 during delivery.

Using these figures, the researchers estimated a 1.4 percent risk of aneurysm rupture during pregnancy and 0.05 percent during delivery. Based on previous studies, these rates were "comparable with the risk of aneurysm rupture in the general population," Dr. Hoh and coauthors write.

Women with ruptured aneurysms were at high risk of poor outcomes—including maternal mortality rates of 9.5 percent for those with rupture during pregnancy and 18 percent with rupture during delivery. The risk of poor outcomes appeared lower for women who underwent treatment for ruptured aneurysms: either surgical clipping or less-invasive, endovascular "coiling." However, because of the relatively small number of patients, these differences were not statistically significant.

High Rate of Cesarean Section May Be Unnecessary

The researchers also identified 218 deliveries in women with known unruptured aneurysms. Approximately 70 percent of these were cesarean deliveries—much higher than the 25 percent rate in women without aneurysms. However, there was no evidence that cesarean delivery improved outcomes for either the mother or baby, compared to "closely supervised vaginal delivery," Dr. Hoh and colleagues note. "Therefore, the method of delivery in patients with intracranial unruptured aneurysm should be based on obstetric considerations."

Aneurysms of the [brain blood vessels](#) are rarely detected in pregnant women. However, ruptured aneurysm during pregnancy and delivery is an unpredictable complication with a substantial risk of death for both the mother and infant. With MRI and other advanced brain imaging studies, more brain aneurysms are being detected before rupture or other problems occur.

In the absence of data on how pregnancy or delivery affects the risk of aneurysm rupture, the optimal management of unruptured aneurysms in pregnant [women](#) has been unclear. "We were not able to find an increased association between pregnancy or [delivery](#) and the risk of rupture of cerebral aneurysms," Dr. Hoh and colleagues conclude. "Once ruptured, however, prompt aneurysmal obliteration (either surgical clipping or endovascular coiling) should be helpful in decreasing the rate of poor outcomes."

Provided by Wolters Kluwer Health

Citation: No increase in brain aneurysm rupture risk during pregnancy and delivery (2013, February 7) retrieved 26 April 2024 from <https://medicalxpress.com/news/2013-02-brain-aneurysm-rupture-pregnancy-delivery.html>

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