



Effect of aspirin on preeclampsia and uterine artery Doppler

Vaghasia D, Alagiriswamy J, Robert K, Radhakrishnan P
Bangalore Fetal Medicine Centre, Bangalore, India

Objective

To evaluate the effect of Aspirin started before 11+0 -1 13+6 weeks scan based on maternal historical factors on the development of Preeclampsia (PE) before 36 weeks and its impact on the Uterine Artery Doppler (UAD) measured at the same time.

Methods

This is a retrospective study performed from July 2004 to December 2017. Detailed maternal history was taken which included intake of Aspirin with dosage, previous preeclampsia, any pre-existing maternal diseases particularly hypertension, Diabetes, Auto immune disorders and thrombophilias. All the scans were performed by the Fetal Medicine Foundation (FMF) certified operators for the assessment of UAD.

Results

9586 singleton pregnancies with normal euploid fetuses and that continued beyond 20 weeks were included in the study. The overall incidence of PE before 36 weeks in this cohort was 70/9586 (0. 7%). These pregnancies were divided into 4 groups based on the Aspirin intake and presence or absence of historically defined risk factors. 377 (3. 93%) pregnancies who were taking Aspirin, of which 88 (23. 3%) were for maternal historical indications, ie, previous preeclampsia, pre-existing maternal diseases particularly hypertension, Diabetes, Auto immune disorders and thrombophilias. This is considered as Group A. 289 (76. 7%) pregnancies, where the indication for Aspirin was not clear and is considered as Group B. Group C consisted of 348 (3. 8%) pregnancies who had the same risk factors as in group A, but were not on Aspirin prior to the 11+0 – 13+6 weeks" scan. Group D consisted of 8861 (96. 2%) who had no risk factors and were not on aspirin. Uterine artery pulsatility index (PI) was above the 95th centile in 9(10. 2%), 26(8. 9%) and 19(5. 5%) and 413 (4. 7%) in the Group A, B C and D respectively. Of these, maternal preeclampsia developed before 36 weeks in 1/9 (11. 1%), 2/26 (7. 7%), 1/19 (5. 3%) and 9/413(2. 2%) pregnancies in the Group A, B, C and D respectively. The uterine artery PI was less than the 95th centile in 79 (89. 8%), 263(91%), 329 (94. 5%) and 8448 (95. 3%) in Group A, B C and D respectively. Of these, maternal preeclampsia developed before 36 weeks in 2/79 (2. 5%), 7/263 (2. 7%), 2/ 329 (0. 6%) and 46/8448 (0. 5%) pregnancies in Group A, B and C respectively.

Conclusion

Our study shows that aspirin started prior to 11+0 – 13+6 weeks has little effect on the UAD as the group on Aspirin had a higher incidence of UAD being above the 95th centile. In addition, irrespective of the presence or absence of risk factors, more women developed PE in the Aspirin group as compared to those not on aspirin. Hence, aspirin started before the first trimester screening has little effect on the development of PE before 36 weeks. We recommend that Aspirin should be judiciously used, preferably following complete screening at the 11+0 – 13+6 weeks' scan including maternal historical factors, UAD assessment and maternal serum biochemistry as recommended by the FMF.