

Combined oral contraceptives & cerebral venous sinus thrombosis: 2 cases and review

Anshuja Singla*, Garima Yadav, Sneha Shree

Department of Obstetrics & Gynecology, University College of Medical Sciences and Guru Teg Bahadur Hospital, Delhi-110095, India

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***Correspondence:**

Dr. Anshuja Singla,

E-mail: dranshuja@gmail.com

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ABSTRACT

The incidence of venous thromboembolism with combined oral contraceptive is 20-30 per 1 lakh women years. Studies have shown that there is an increasing risk of VTE in current users and risk decreases with both time of use and decreasing estrogen dose. We report two cases in which both women had CVST triggered by combined oral contraceptive use. Before prescribing COCs, a complete personal and family history along with evaluation of risk factors for VTE and cardiovascular diseases is mandatory to ensure safe use of COCs.

Keywords: Combined oral contraceptive, Venous thromboembolism, Estrogen

INTRODUCTION

Though rare, the risk of thrombotic events with Combined Oral Contraceptives (COC) is there and the safety, an issue of debate. The incidence of venous thromboembolism (VTE) with COC is 20-30 per 1 lakh women years. The highest risk is in the first year of use, suggesting the possibility of a predisposing condition, such as a carrier of a thrombogenic mutation or an alteration in the hemostatic variable like acquired resistance to protein C.¹

Studies have shown that there is an increasing risk of VTE in current users and risk decreases with both time of use and decreasing estrogen dose.^{2,3}

Though the risk is mainly related to the dose of estrogens, recent studies have indicated the role of progestins as well. Newer progestins like desogestrel or gestodene have a two-fold greater risk as compared to COC'S containing levonorgestrel (LNG) or norethisterone.⁴

CASE REPORT

Case 1

A 31 year old parous lady presented to Gynaecology casualty with repeated episodes of headache and vomiting for one month. She had history of two episodes of loss of consciousness for which she did not seek any medical help. She started using LNG COC on her own two years back, which she stopped one month back because of repeated headaches.

She denied history of fever, visual defects, confusion, weakness, numbness, head trauma, prior migraine or headaches and any thrombotic events. Past and family history was unremarkable. She did not have any addictions or allergies.

Motor and sensory examinations were normal. Her thrombophilia screen, haemogram, liver function tests, kidney function tests, thyroid and lipid profile, APLA panel were normal. MR venography revealed an infarct in the sagittal sinus. A working diagnosis of Cerebral

Venous Sinus Thrombosis (CVST) due to COC was made. Neurology opinion was sought and low molecular weight heparin started. She had gradual improvement in symptoms and was discharged on warfarin. Alternative contraceptive advice was given. The women reported to us 2 months later with 7 weeks pregnancy. As she was not keen to continue the pregnancy and was on warfarin therapy, decision for termination of pregnancy was taken. Patient was discharged in a satisfactory condition and is on regular follow up with the neurology department till date.

Case 2

28 year old parous female presented to OPD with severe acute onset continuous headache associated with vomiting. There were no complaints of visual disturbances, seizures, weakness of limbs, fever or altered sensorium or any similar episodes in the past. She gave history of abortion 5 months back following which she was diagnosed with an ovarian cyst and was started on LNG COC. Her general physical examination, motor, and sensory examinations were all normal. Her thrombophilia screen, hemogram, liver function tests, kidney function tests, thyroid and lipid profile, APLA workup were all within normal limits. Non contrast CT head showed thrombosis of right transverse, sigmoid & superior sagittal sinuses. MR venography confirmed the findings. Since all investigations were normal, a diagnosis of CVST due to COC was made. Low molecular weight heparin was started. She had gradual improvement and was discharged on warfarin and is on regular follow up. MR venography done 3 months later showed resolution of thrombosis.

DISCUSSION

At present, no laboratory tests are available which can estimate the risk of developing VTE including Deep Venous Thrombosis (DVT), pulmonary embolism, thrombotic shock and CVST in asymptomatic COC users. The risk of VTE is 3-6 times more in users as compared to non-users.⁵

CVST, similar in etiology to DVT is rarer, though cases have been reported in literature. De Bruijn et al.⁶ and Martinelli et al.⁷ reported that compared to non-users, COC users have increased risk of CVST independent of pro thrombotic conditions. Jick SS⁸ reported 16 cases in 1 million users. Among them 5 cases were reported with desogestrel, 7 with norgestimate and 2 with LNG current users and 2 cases during the non-exposed times.

Although non oral route delivers a lower systemic estrogen dose, a similar decrease in side effects has not been demonstrated. These views were endorsed by Sitruk-Ware et al.⁹ and Rad et al.¹⁰ Kolacki C¹¹ and Dunne C et al.¹² separately reported CVST in women using etonogestrel containing vaginal contraceptive ring.

A Danish cohort study⁴ concluded that compared to non-users of hormonal contraception, current users with LNG had 3 fold increased risk, those with desogestrel, gestodene and drospirinone had 6-7 fold increased risk of confirmed venous thrombosis. Our patient was a current LNG user.

Therefore, before prescribing COC's, a complete personal and family history along with evaluation of risk factors for VTE and cardiovascular diseases is mandatory to ensure safe use of COC's. Caution must be exerted on over the counter sales of COC especially in low resource countries because nobody knows who can be a potential candidate to have thrombosis.

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