

Pulmonary Embolism Associated with Combined Oral Contraceptive Use: A Case Series

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Background: Combined estrogen–progestin contraceptives increase venous thromboembolic risk, particularly in women with inherited thrombophilia or additional risk factors. Clinical presentations vary, but relationships between formulation, genetic predisposition, severity and recovery remain unclear. Classification as a minor transient risk factor also raises questions regarding anticoagulation duration.

Methods: We retrospectively reviewed eight women with contraceptive-associated PE followed at Policlinico Umberto I. Data included contraceptive formulation, thrombophilic findings, additional risk factors, comorbidities, presenting symptoms, concomitant deep vein thrombosis (DVT), treatment and ESC risk classification. Follow-up assessments included NYHA class and right ventricular echocardiographic parameters. Variable-specific denominators were used.

Results: Mean age was 30.4 ± 8.1 years. Formulations were identified in five patients: drospirenone/ethinylestradiol in three, norgestrel acetate/estradiol in one and cyproterone acetate/ethinylestradiol in one. All had a Charlson Comorbidity Index of zero; two were former smokers and one had dyslipidaemia.

Four presented with lower-limb pain, two with dyspnoea, one with chest pain and one with syncope. DVT was documented in six. Genetic results were available in six: three carried factor V Leiden and two prothrombin G20210A, including one with both variants. ESC classification identified four low-risk, two intermediate-low-risk, one intermediate-high-risk and one high-risk PE. The high-risk patient presented with syncope, received systemic thrombolysis and had no documented inherited thrombophilia. All three factor V Leiden-positive patients had low-risk PE with lower-limb pain as their sole recorded symptom.

At follow-up, seven were NYHA I and one NYHA II. All had RV/LV ratios <1 and preserved longitudinal RV function (TAPSE 22–28 mm; S' 11–15 cm/s).

Conclusions: This exploratory series illustrates heterogeneous PE presentations and favourable findings at available follow-up. Larger prospective multicentre cohorts could clarify how contraceptive formulation, genetic predisposition and additional risk factors jointly relate to PE severity and recovery, potentially informing individualized management.

References

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