

## **THROMBOLYTIC EVENTS IN WOMEN USING ORAL HORMONAL CONTRACEPTIVES**

---

***Helena Mendes Cunha***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/2309957530190096>

***Felipe dos Reis Candido***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/6755079991252410>

***Letícia Stefani Santos***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/8437699624196099>

***Anna Laura Ferreira Franco***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/9322077644759559>

***Taina Leite Ferreira Machado***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/7595204653370356>

***Thassio Sabino Mendanha***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/3699415561298312>

***João Victor Chaves Gomes de Sousa***

Centro Universitário IMEPAC

Araguari - MG

<http://lattes.cnpq.br/4936858089713212>

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



**João Victor Lima de Araujo**  
Centro Universitário IMEPAC  
Araguari – MG  
<http://lattes.cnpq.br/6967166846723812>

**Deluma Rodrigues Luna**  
Centro Universitário IMEPAC  
Araguari – MG  
<http://lattes.cnpq.br/9646764329337771>

**Lucas Borges De Carísio**  
Centro Universitário IMEPAC  
Araguari – MG  
<http://lattes.cnpq.br/3812725277609357>

**Bianca Xavier Matos**  
Centro Universitário IMEPAC  
Araguari – MG  
<https://lattes.cnpq.br/5702139989965096>

**Brener de Matos Xavier**  
Centro Universitário IMEPAC  
Araguari – MG  
<https://lattes.cnpq.br/8784425797995109>

**Abstract:** Stroke and Deep Vein Thrombosis are thrombolytic events that affect a large part of the population. The objective of this work is to carry out a study about the relationship of such events with the use of oral hormonal contraceptives (OAC) in young women. This is a literature review, using articles published since 2021, of which were select five articles according to their relevance for the theme. When evaluating the chosen studies, it was possible to associate mainly estrus and progesterone with a higher risk of thrombotic events, mainly DVT. Therefore, demonstrating the importance of medical follow-up before and during the use of OAC.

**Keywords:** Stroke, deep vein thrombosis, oral hormonal contraceptives, young women

## INTRODUCTION

According to data from the Ministry of Health, the classification of oral hormonal contraceptives can be classified according to hormonal composition, dosage and type of hormone. As for the hormonal composition, they are divided into a combined method, containing an estrogen and a progesterone, and an isolated method, containing only progesterone (mini-pill). Combined oral contraceptives are indicated for healthy women, preferably non-smokers, under 35 years of age and who really want to avoid pregnancy<sup>5</sup>.

The main action of these drugs is during ovulation, preventing it by inhibiting the secretion of two hormones essential to this process: follicle stimulating hormone (FSH – Follicle Stimulating Hormone) and luteinizing hormone (LH). In addition, they act on the cervical mucus, making it thicker and thus making it more difficult for sperm to pass through, as well as promoting changes in the endometrium and fallopian tubes<sup>1</sup>.

Ethinylene estradiol induces significant changes in the coagulation system since it

has the function of increasing thrombin and coagulation factors, from the reduction of natural coagulation inhibitors. Furthermore, as this hormone acts on the vascular wall, it influences changes in the factors responsible for stimulating endothelial dysfunction. It is these changes that will develop thrombolytic events, such as Stroke and Deep Vein Thrombosis. (TVP)<sup>2</sup>.

The present work aims to carry out a study on the relationship between CVA and DVT in young women, smokers and using oral hormonal contraceptives. In addition to reporting early signs and symptoms as a form of alert for the population studied.

## METHODOLOGY

This is a qualitative research of the Literature Review type using secondary sources such as review articles. First, a search was carried out in virtual databases with academic literature, with restriction to only review articles published from 2021 onwards. Keywords related to the topic Cerebrovascular Accident and Hormonal Contraceptives were used. After obtaining 47 articles, other keywords related to the topic were verified, reducing the number of works to 27. In the end, the following keywords were used: stroke, hormonal contraceptives, young women and smoking. The Boolean operators AND, OR, and NOT were used to cross the above descriptors. Among the publications found, those that refer to topics that do not fit the research topic were excluded. Remaining 5 articles, all of them read and analyzed by the researchers.

## RESULTS

The incidence of DVT is twice as high in users of third-generation contraceptives when compared to second-generation contraceptives, which highlights the influence of hormonal dosage in this process. The British

Medical Safety Committee was responsible for the proposal to reduce the estrogen dose from 150 mcg to 50 mcg, resulting in a 25% decrease in the occurrence of thromboembolic diseases. It is also pointed out that the components gestodene and desogestrel are associated with twice the risk of developing thrombosis than those that include second-generation progestogens (levonorgestrel). These effects are related to the amount of estrogen in its formulation and the type of progesterone included in the medication<sup>2</sup>.

Among the patients who developed thrombosis, 80% of them had contraceptives as a risk factor. In addition, it was shown that prolonged use of the pills increased the risk of developing thrombosis by two to five times, in the same way that there was a higher prevalence of stroke in patients using the pills and greater protection in those who did not use any type of hormone<sup>2</sup>.

## DISCUSSIONS

Venous thrombosis (VT) is a consequence of three types of alteration called "Virchow's Triad", which can act alone or simultaneously in: alterations in the vascular or cardiac wall; neurological or hemodynamic changes and changes in blood composition with hypercoagulability. It is a common and potentially serious pathology, frequent in emergency care and generating high social and economic costs, and it can also be asymptomatic, as the symptoms depend on the extent of the thrombus, the degree of occlusion and local inflammation<sup>2</sup>.

The hemostasis process is largely responsible for keeping blood circulation in perfect conditions within the vessels, ensuring that the blood remains liquid, preventing clots from forming. Physiologically, the blood must remain liquid, flowing properly in the central part of the vessel, without coming into contact with the endothelium, which must

remain intact, with the rapid formation of a hemostatic plug in the face of an injury to prevent hemorrhages.<sup>1</sup>

Thrombosis occurs when there is an imbalance in homeostasis developing in the veins or arteries occurring in a way that alters the flow of blood, causing a clot to form in the bloodstream causing pain and swelling at the site. The most common form is deep vein thrombosis (DVT) that occurs mainly in the lower limbs, when the thrombus moves is called an embolus, it travels in the bloodstream and can get stuck in the arteries, blocking the passage of blood, resulting in complications such as an accident. stroke (CVA), pulmonary embolism (PE) among others<sup>4</sup>.

The cerebrovascular accident (CVA) or stroke is a syndrome that affects the brain with unexpected events, referring to the vessels or arteries that are responsible for the blood circulation to reach the brain, formerly called cerebrovascular accident (CVA), terminology updated because the accident not only affects the brain, but also the entire brain - cerebrum, brainstem and cerebellum<sup>2</sup>.

In this context, there are some signs that help to recognize a stroke; such as the mental confusion, speech disturbance, coordination alteration, balance or comprehension alteration, vision alteration, asthenia, facial paraesthesia, dizziness, sudden, intense headache with no apparent cause. Thus, the faster the diagnosis and treatment, the greater the chances of recovery and reversal of the condition<sup>4</sup>.

## CONCLUSION

When evaluating the scientific bibliographic references on this subject, it was found that the association of estrogen and progesterone have a greater risk of thrombotic events, mainly related to DVT. In addition, the hormonal components of the pills lead to a variation in the lipid profile, with emphasis on

the reduction of HDL levels, elevation of blood pressure in previously normotensive women, in addition to changes in glucose tolerance and increase in inflammatory markers such as protein C. reactive. Such changes are of paramount importance for women's health, especially due to the widespread use of OAC and the imminence of side effects<sup>3</sup>.

In this context, there is a need to reinforce the importance of a medical consultation before starting the use of OACs in order to build instruments that assess the relationship between the use of these drugs and the risk factors presented by the patient, helping in the clinical management. of the health professional and evaluating risks benefits individually and with scientific evidence.

## REFERENCES

ALMEIDA, Lalia. **Uso de anticoncepcionais orais na incidência de eventos trombóticos: uma revisão integrativa.** 2021.

DE CARVALHO, Joyce Tavares. **A INFLUÊNCIA DO USO DE ANTICONCEPCIONAIS HORMONAIS RELACIONADO AO ACIDENTE VASCULAR ENCEFÁLICO E TROMBOSE: REVISÃO BIBLIOGRÁFICA.** Repositório de Trabalhos de Conclusão de Curso, 2021.

DOS SANTOS, Thiago Mendes et al. **Os anticoncepcionais orais como fator de risco cardiovascular: uma revisão narrativa.** Revista Eletrônica Acervo Saúde, v. 13, n. 9, p. e8592-e8592, 2021.

OLIVEIRA, Taise. **ANTICONCEPCIONAIS E O RISCO DE EVENTOS TROBÔTICOS: UMA REVISÃO NARRATIVA.** 2022.

OLIVEIRA, Fabrícia Gabriele França de; MENEZES, Jennifer Chrisler de. **Uso de contraceptivos orais e sua influência no desenvolvimento de trombose venosa profunda: uma revisão de literatura.** 2021.