

# The Use of Spironolactone in the Treatment of Acne in Women

Ayla Pires dos Reis Lima\*

Department of Sustainable Development, University of Stockholm, Stockholm, Sweden

## DESCRIPTION

Hyperandrogenism is a problem that can affect women of all age groups [1]. This hormonal disorder is characterized by the excess of male hormones in the woman's body, mainly testosterone, which is also produced by the woman through the adrenal glands, ovaries and by peripheral conversion in the skin from other hormones, necessary for the functioning of the system [2].

This disorder can cause problems such as acne inflammatory lesions on the skin, due to the exacerbated production of sebum by an altered response of cutaneous androgenic receptors to hormonal changes in the menstrual cycle [1].

There are now systemic treatments considered conventional in the market, which can alleviate this situation, these include some classes of antibiotics, retinoid, and oral contraceptives, which are commonly the most prescribed by doctors [2].

A safer option that may be the first choice in the treatment of acne for these patients is spironolactone. Its mechanism of action is based on the inhibition of the enzyme 5-reductase, responsible for converting testosterone to dihydrotestosterone (DHT), an even more potent hormone that triggers the process that gives rise to acne in women even after puberty [2].

Spironolactone has undergone studies that prove its effectiveness in the treatment of female acne [3]. And as for its side effects, they do not compare in terms of malignancy compared to conventional treatments [4].

## ABOUT THE STUDY

This is a bibliographic review with references to publications of journals, research annals, database of articles and publications in scientific journals. Data collection took place in a qualitative way, in order to unite the scientific evidence obtained by the referenced authors. The references are listed with works of varied nationalities and with credible research sources: annals, magazines and newspapers recognized in the health area.

The research platforms used were consulted in a virtual way, through the websites: Google Scholar, Pub Med, and Scielo. The research was carried out in an advanced way, targeting the subject in a specific way, using keywords such as: "spironolactone",

"spironolactone", "female hyperandrogenism", "women with acne", and "treatment for female acne".

The selection of the references used was based on reading the titles, abstracts and introductions, verifying their origins. There were inclusion and exclusion criteria when choosing the cited references. The inclusion criteria were: studies that correlate spironolactone with the treatment of acne; conventional acne treatments for women; and, field studies that proved the efficacy of spironolactone in the treatment of acne in adult women. The exclusion criteria were: acne treatment for men; other indications for spironolactone; and, period of publication of the work (of a maximum of 15 years ago).

## DISCUSSION

Acne arises when the production of sebum is increased, it is composed of lipids and sebocytes, which start their differentiation through the action of androgen hormones, causing them to rupture and release this secretion in the hair follicle, causing inflammatory lesions in the skin [5].

Its treatment is necessary, so that women who are already in adulthood are spared suffering, low self-esteem, insecurity and even depression. Therefore, a treatment must be prescribed, but the most common ones can cause many side effects in the short and long term, as shown by numerous studies.

One of the treatments mentioned is with antibiotics, generally those with lipophilic action, such as cyclins, macrolides and sulfas, are administered to fight the bacterium *Propionibacterium acnes* (*P. acnes*), which colonizes the acne region, but despite presenting a good response, they should not be maintained as monotherapy due to the risk of promoting bacterial resistance [2].

Oral contraceptives with ant androgenic action start from the same principle of action as spironolactone, but they are hormones (estrogens and progestogens) that alter the hemostatic system resulting in fibrin and leading to the formation of clots, its long-term use is associated with the appearance of thrombosis in many patients [6].

Systemic retinoids, such as isotretinoin, for example, are indicated to treat severe acne, and are proven to be embryo toxic and

**Correspondence to:** Ayla Pires dos Reis Lima, Department of Sustainable Development, University of Stockholm, Stockholm, Sweden, Tel No: +55 31 99389 2664; E-mail: aylapires@hotmail.com

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teratogenic. Its use is so risky for the health of the woman, that to purchase this medication, a special prescription is required-C2 (Retinoids for systemic use) and a term in which the patient declares to be aware of the risks and undertakes not to become pregnant during treatment, in addition to presenting other side effects considered serious: Changes in mucous membranes and skin, reduction in the thickness of the stratum corneum, alteration of the skin barrier function, dryness and lip fissures, and ulcerative cheilitis [7,8].

Although spironolactone has the same mechanism of action as some contraceptives, its side effects cannot be compared in terms of malignancy, the most common side effects of spironolactone are the diuretic effect, menstrual irregularity, mastalgia, postural hypotension, and hyperkalaemia (rare). In addition, it has no association with malignancy and is the most widely used antiandrogen in the USA [2].

Through studies carried out, the vast majority of women undergoing treatment with spironolactone had an improvement in acne, and a large percentage of them had their acne completely cured [3]. Spironolactone has evidence in its favor, so that it can list conventional acne treatments in women, thus preventing patients from exposing themselves to risky treatments as the first choice.

## CONCLUSION

Acne is a dermatological problem that can affect women even after puberty and prolong itself leaving scars. With existing treatments on the market it is possible to treat it, but it must be taken into account that its benefits must outweigh the harm. For this, spironolactone proves to be the best option combining the effectiveness that has already been proven and its side effects, which are smaller and milder when compared to the others.

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