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Effetti anti-androgenici di un estratto lipidico dei frutti di
***Kigelia africana* in un modello sperimentale di iperplasia**
prostatica benigna indotta dal testosterone in ratti
Sprangue Dawley

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Anti-androgenic effects of Lipidic Extract from *Kigelia africana* fruits in experimental Benign Prostatic Hyperplasia induced by testosterone in Sprague Dawley Rats

Abstract

Kigelia africana (Lam.) Benth. (Bignoniaceae) is a plant used in African folk medicine as a vegetal remedy for various diseases, including some disorders of the male reproductive system, but its potential activities have not yet been fully explored. The main phytochemical constituent of *K. africana* fruits are iridoids, naphthoquinones, lignan, flavonoids, as well as phytosterols and fatty acids (Kokwaro J.O., 2009; Bello I., 2016). Benign prostatic hyperplasia (BPH) is a common disease seen in aged men, characterized by a non-malignant prostatic swelling associated with histomorphological changes, mainly due to the proliferation of luminal epithelium and fibromuscular tissue. The aim of the present study was to investigate whether the lipidic hexane extract (LHE) from *K. africana* fruits, identified and quantified by using comprehensive two-dimensional gas chromatography-mass spectrometry/flame ionization detection (GC×GC-MS/FID), can prevent or reverse benign prostatic hyperplasia in rats. BPH was induced in experimental groups by daily subcutaneous injections of testosterone propionate (TP) for four weeks. β -sitosterol (β -s) was used as a positive control. A first series of experiment was conducted to investigate the ability of LHE to prevent BPH, using five groups of 5 rats for group: testosterone group (5mg/kg b.w., for 4 weeks); LHE groups (administered daily orally at a dose of 10 or 100 mg/kg b.w. along with the TP injections, for 4 weeks); β -s (administered daily orally at a dose of 1 mg/kg b.w. together with the

TP injections, for 4 weeks); control group (vehicle by oral gavage and soy oil by subcutaneous injection). The second series of experiments was carried out, in two groups of 5 animals, to investigate the ability of LHE to reverse BPH. The rats were treated with LHE (100 mg/kg b.w.) or β -s (1 mg/kg b.w.) together with the TP injections for other 2 weeks. On day 28, the animals were sacrificed by cervical dislocation after anaesthesia. Prostates were excised, weighed, and used for macroscopic studies. Testosterone and dihydrotestosterone (DHT) levels in prostate were measured. The results showed that LHE significantly reduced the prostatic weight, prostatic index, prostatic levels of testosterone and DHT. These effects were superior to those demonstrated by β -s and appear to be due to a partial antiandrogenic activity of LHE and support the traditional use in some disorders of the prostate.

Keywords: Prostatic Hyperplasia, Testosterone, Rats, β -sitosterol, *Kigelia africana*, Lipidic Hexane Extract, Anti-androgenic Effects.