Role of *Habbatus sauda* towards the histological features of nicotine treated male rats seminal vesicle and prostate gland.

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Abstract

*Habbatus sauda* (Nigella sativa) is a plant commonly used as herbal medicine for treatment of diseases while nicotine is an addictive chemical that is present in cigarettes. The study was conducted to observe the effects of *Habbatus sauda* on histological structures of nicotine treated male rats’ seminal vesicles (SV) and prostate glands (PG). Rats were divided into five groups: *Habbatus sauda* control (HSC), *Habbatus sauda* (HS), nicotine control (NC), nicotine (N) and nicotine – *Habbatus sauda* (NHS). The HSC and HS groups were force-fed with 0.1ml/100g of corn oil and 6µl/100g of *Habbatus sauda* oil, respectively. The NC and N groups were intramuscularly (i.m.) injected with 0.1ml/100g of saline and 5.0mg/100g of nicotine, respectively. The NHS group was treated with the same dosage of nicotine and *Habbatus sauda* as the N and HS groups. The treatment was conducted for 100 days. The PG and SV of animals in the N group showed reduction in the epithelial height of the mucosal linings compared to that of in the NC, HSC, HS and NHS groups. Moreover, there was also less acidophilic secretion materials found in the glands of the animals in the N group compared to the other 4 groups. However, the histology of the prostate glands and seminal vesicles in the NHS group was noted to be similar to that of in the control (NC and HSC) groups. Hence, this suggested that administration of *Habbatus sauda* could lead to an improvement in histology and function of both PG and SV in the nicotine treated rats.

Keyword: *Nigella sativa*, *Habbatus sauda*, nicotine, seminal vesicle, prostate gland, histology

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Introduction

Infertility is considered as one of the public health issues recognised by World Health Organisation (WHO) where it affects approximately 10 – 15% of reproductive aged worldwide [1, 2, and 3]. Many scientists prefer natural products to treat fertility problems as it is a natural primary source of fertility regulating agents [4]. Besides, studies showed those plant products have minimal or no negative implications as antifertility agents [4]. Interestingly, 25% - 30% of prescriptions in modern medicine also have active properties which derived from plants [5 and 6]. *Habbatus sauda* (Nigella sativa) from Ranunculaceae family is an annual herbaceous, dicotyledonous plant found growing annually in Eastern Europe, Middle East and Western Asia, as well as the bordering of Mediterranean Sea, Pakistan and India [7, 8, 9, and 10]. *Habbatus sauda* (HS) plant may grow with the minimum height of 20cm up to maximum height of 90cm [9]. The segment of HS’s leaves looks narrowly linear to thread – like. As for its flowers it differs in color with yellow, pink pale, blue or pale purple with each flower consists of 5-10 petals [9]. Fruits produced by N. sativa were located in a capsule where each capsule is composed with a few united follicles [9]. Inside the follicles is where numerous tiny black seed [7, 9]. In Arabic the tiny black seed of N. sativa is known as “Al-Habba Al-Sauda” and “Al-Habba Al-Barakali” in Arabic while in English it is called as black seed, black cumin or black caraway [7]. In some countries such as Asian and far Eastern countries, N. sativa is used as spice and food preservatives [10]. Dating back to 2 000 years ago, both seeds and oil of N. sativa

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