0220. Effect Of Habbatus Sauda On The Spermatogenic Cell Of Nicotine Treated Male Rats

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In the last 2000 years, Habbatus sauda is a plant which was consumed extensively ranging from spices, condiments, similarly as an alternative medicine by both the natives and worldwide society. Its value as medicinal plant was further acknowledged as it was stated in Ibn Sina’s five volume text of ‘The Canon of Medicine’ and Al – Tibb Al Nawawi (Medicine of the Prophet Muhammad) (peace be upon him), similarly in the Unani Tibb and Indian medicine. Nicotine, the addictive chemical which is an alkaloid present in the tobacco cigarette with 10 – 14 mg of nicotine in each cigarette. The detrimental effect of nicotine is well documented and caused oxidative stress in rodent. Habbatus sauda has an antioxidant property that is beneficial to counteract the free radicals due to oxidative stress. Thus, the study was conducted as to observe the effects of Habbatus sauda on the spermatogenic cell count of nicotine treated male rats. Sprague Dawley rats were divided into three groups: Habbatus sauda (HS), nicotine (N) and nicotine – Habbatus sauda (NHS). The HS group was force-fed with 6µl/100g of Habbatus sauda oil. The N group was intramuscularly (i.m.) injected with 5.0mg/100g of nicotine. 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. Harvested testes from the treated rats were fixed in the Bouin solution. The fixed testes were dehydrated in the increasing concentration of alcohol prior to embedding. Embedded samples were sectioned at 8 µm thickness before being stained with Haematoxylin and Eosin (H&E) staining. The HS group gave significantly higher spermatid cells number as compared to the N and NHS groups, though between the N and NHS groups, significant differences were absence. Similar finding was also observed on Leydig cells where the HS group showed significantly higher number than the NHS and N groups. As for the spermatozoa stage, both the HS and NHS groups observed significantly higher number than the N group. However, at the spermatogonia and spermatocytes stages, no significant differences were appeared among the groups. Sertoli cell counts also showed no significant difference among the HS, N and NHS groups. Therefore, this study suggested that administration of Habbatus sauda may have ameliorating effects on nicotine treated male rats’ spermatogenic cells.

Keyword: Habbatus sauda, nicotine, spermatogenic cell, testis, rat