A Novel and Potential Aqueous Extract of Neem leaf for Vaginal Contraceptive product

Nripendra Singh

Department of Pharmaceutics, VBS, Purvanchal University, Jaunpur, Uttar Pradesh, India
*****Corresponding author, E-mail: nripendra2007@gmail.com

Abstract

Vaginal contraceptive products have been available for many years, which usually contain membrane surfactant nonoxynol-9 (N-9) as one of the main ingredients. However, the major drawback of using these surfactants is their detergent-type cytotoxic effect on vaginal cells. Besides, N-9 is also known to inactivate lactobacilli, leading to the disturbance of the vaginal microflora, which in turn increases the chances of STI/HIV transmission. The Neem seed oil has been proved to be spermicidal against rhesus monkey and human spermatozoa *in-vitro*. A potential extract of Neem seed was reported to be a precursor for immunocontraceptive guided fraction, whereas a lyophilized neem leaf extract that is naturally hydrophilic has also shown spermicidal activity against human spermatozoa *in-vitro.* No one has ever attempted the simultaneous extraction of hydrophilic and hydrophobic constituents from Neem leaves. This study proposes a novel aqueous Neem leaf extract (NANE), which was extracted using hydrophilic lipids and involving no use of the organic solvent or thermal application. The extract was mixed with a suspension containing sperm. The mixture was mounted on the stage of the polarized microscope for 20 seconds at 100x (oil immersion) and observed for motile sperm. The spermicidal activity of novel aqueous Neem extract on rat spermatozoa was the same as in the case of human spermatozoa. The minimum effective concentration (MEC) of NANE was found at 2.5 mg/ml and 5 mg/ml in rat and human spermatozoa, respectively. The present study reveals the novel, single-step, cost-effective contraceptive preparation and evaluation of its *in-vitro* spermicidal effect in human as well as rat spermatozoa.

Keywords: *Contraception, Neem leaf extract, Novel method of extraction, In-vitro spermicidal activity in human spermatozoa.*