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Herb Based Medication of Alopecia: An Alternative Medicine and Side Effects

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Alopecia or pattern alopecia or androgenic alopecia means baldness or loss of hair from head. Alopecia areata signifies hair loss in patches which may lead to alopecia totalis or complete baldness. Alopecia may occur by trichotillomania, iron deficiency or malnutrition, improper management and lack of care of hair, cancer chemotherapy, fungal infection, inflammatory response, hypervitaminosis etc. In ethnobotanical literature, plants such as *Rosmarinus officinalis* (Ceuterick *et al.*, 2008; Gonzalez *et al.*, 2010), *Centaurea ornata* (Gonzalez *et al.*, 2010), *Urtica dioica* (Pieroni, 2000, Pieroni *et al.*, 2005b; Gonzalez *et al.*, 2010; Mustafa *et al.*, 2012a), *Eclipta prostrata* (Lee *et al.*, 2008), *Hibiscus rosa-sinensis* (Sankaranarayanan *et al.*, 2010), *Thuja orientalis* (Mustafa *et al.*, 2012b), *Betula pendula*, *Sonchus asper* (Pieroni, 2000), *Allium cepa*, *Cassia angustifolia* (Pieroni *et al.*, 2005a) etc. have been reported in the treatment of alopecia.

Botanicals have been cited in the management of hair fall by various authors (Iagodka, 1986; Abdullah and Rashid, 2010). Earlier, galenicals of *Bidens tripartita* has been reported in the treatment of alopecia areata (Levin *et al.*, 1974). Garlic is being used in the treatment of alopecia areata in Turkey (Gonul *et al.*, 2009). *Cuscuta reflexa*, *Citrullus colocynthis* and *Eclipta alba* were tested as polyherbal formulations as hair growth promoter in rat model (Roy *et al.*, 2007). Contact dermatitis was noted as a result of application of neem oil in the treatment of alopecia (Reutemann and Ehrlich, 2008). Acute hepatitis was observed following a treatment of hair loss by oral green tea extracts (*Camellia Sinensis*) (Verhelst *et al.*, 2009). Moreover, some forms of alopecia were not found to be cured by some Nigerian herbal remedy (Ajose, 2007). In another study, Chinese herb extract (Dabao) was found to have a positive effect on the nonvellus hair growth in males with alopecia androgenetica (Kessels *et al.*, 1991). IGF-1 (insulin-like growth factor-1), TGF- β 2 (transforming growth factor- β 2), Wnt5 α etc. were used as various target proteins related to hair growth/loss to determine the herbal extracts in the treatment of alopecia (Kim *et al.*, 2013). In another study, extract of *Puerariae Flos* (the flowers of *Pueraria thomsonii*) had exhibited positive response against androgenic alopecia and saponins, including soyasaponin I and kaikasaponin III were identified as active principles of the said extract (Murata *et al.*, 2012b). In another androgenetic alopecia model, ginseng rhizome and ginsenoside Ro have shown *in vivo* hair re-growth against testosterone 5 α -reductase (5 α R) in a dose dependent manner (Murata *et al.*, 2012a). Earlier, ginseng radix has exhibited growth promoting activity on mouse

vibrissal hair follicles under cultural conditions and 20(S)-ginsenoside-Rg(3) has also shown hair growth promoting activity (Matsuda *et al.*, 2003).

As psychological and sociological aspects are the integral parts of alopecia (Semalty *et al.*, 2011), human civilization has always been in the quest to found better remedies to prevent hair loss and promote hair growth. The treatment is usually time-consuming (Miteva and Tosti, 2012). Even Sidhha medicine of south India advocates the use of herbal and herbo mineral treatment for alopecia (Thas, 2008). Although many of these herbal formulations have been popularized as hair growth promoters, necessity of randomized control trials, enough statistical data and toxicological aspects are to be considered before reaching to final conclusions.

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