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Will Herbal Ingredients Work for Drug-induced Hyperprolactinemia?

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Commentary on:

Hasani-Ranjbar *et al.* A systematic review on efficacy of herbal medicines in the management of human drug-induced hyperprolactinemia, potential sources for the development of novel drugs. *Int. J. Pharmacol.*, 2010; 6 (5): 691-695.

In patients with hyperprolactinemia presentations such as galactorrhea and hypogonadotropic hypogonadism revealing by oligomenorrhea in women and sexual dysfunction in men; it is important to differentiate between prolactin producing tumors, hypothyroidism, hypothalamic diseases and medically induced hyperprolactinemia.

Hyperprolactinemia is one of the common side effects of psychotropic drugs (Molitch, 2001). Other medications which interfere with prolactin metabolism are included but not limited to opiates, cocaine, estrogens and antihypertensive drugs like verapamil and methyldopa (Molitch, 2005). The mechanism by which these drugs increase prolactin levels are uncertain, however dopamine receptor antagonist property is the most important mechanism that especially antipsychotics cause their side effects.

In a patient takes medications known to cause hyperprolactinemia, sign of prolactin elevation should be watchfully monitored. If hyperprolactinemia observed and suspected, other more critical conditions like pituitary micro or macro-adenoma or tumors should be first ruled out. Once careful patient history and para-clinical documentations ruled out the possibility of more serious causes of hyperprolactinemia, clinician should decide about how to manage this medication side effect.

The simplest approach would be the discontinuation of the drug causing hyperprolactinemia. Short-time interruption of the drug usually can lead prolactin level to return to normal within few days. If patient has to be on the drug constantly and non-stop, taking a similar medication that does not cause hyperprolactinemia is an alternative option. Beside all above, in patients with psychiatric conditions consulting with psychiatrist is necessary to avoid any unpredicted exacerbations.

However, if neither short-period drug redemption nor changing the medication were possible, recruiting a dopamine agonist or other drugs with such properties would be an alternative way to compensate hyperprolactinemia.

Bromocriptine has been used in different studies in drug-induced hyperprolactinemia to lower prolactin level without discontinuation of original antipsychotic medication. In these series bromocriptine was partially successful to lower prolactin level and to reduce clinical signs (Cohn *et al.*, 1985; Smith, 1992; Tollin, 2000). Other dopamine agonist cabergoline has also been shown to reduce drug-induced hyperprolactinemia (Cavallaro *et al.*, 2004).

Hasani-Ranjbar *et al.* (2010) conducted a systematic review and found studies in which herbal ingredients were used in the treatment of drug-induced hyperprolactinemia (Hasani-Ranjbar *et al.*, 2010). Authors showed that five different herbal components decreased prolactin levels and clinical signs in five studies. Although the quality of studies was low, as stated by authors, this finding that herbal medication is useful in management of drug-induced hyperprolactinemia is respectful and must be taken into consideration. Herbal ingredients are strong and available sources of therapeutic agents for different medical conditions like diabetes (Rahimi *et al.*, 2005), obesity (Hasani-Ranjbar *et al.*, 2009) and inflammatory bowel diseases (Rahimi *et al.*, 2009).

As is often the case, these interesting findings raise new questions. Most importantly, what was the mechanism of action for each herbal ingredient? Were they dopamine agonists or they are playing a different role to lower prolactin level? What are the side effects of those elements? And the same question for all herbal drugs, what is the best dose for any individual ingredient to see the most effective response without serious adverse event?

To address above questions, we need not only basic laboratory-based researches but also well-designed clinical studies to be done. These studies will show the possibility of using herbal medication in hyperprolactinemia in safely and effective manner.

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