Preparation, standardization and evaluation of a herbal tablet effective in dyspepsia based on Traditional Persian Medicine

Asma Azadnia[a], Mohammad Mehdi Zarshenas[a,b], Elahehnaz Parhizkar[c]*

[a]Department of Traditional Pharmacy, School of Pharmacy, Shiraz University of Medical Sciences, Shiraz, Iran
[b]Medicinal Plants Processing Research Center (MPPRC), Shiraz University of Medical Sciences, Meymand, Iran
[c]Department of Pharmaceutics, School of Pharmacy, Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

Background and Purpose: The increasing prevalence of digestive disorders is one of the major problems of societies today. One of the most important of these diseases is dyspepsia, which is treated by various medicinal and non-medicinal methods. One of the methods of drug therapy is use of complementary medicine treatments and medicinal plants, extracts, essential oils and compounds extracted from plants. Among the specific medicinal forms mentioned in the traditional pharmaceuticals of Iran, an important compound drug is "maldigestion treatment" which indirectly refers to dyspepsia. This indigestion remedy includes *Piper nigrum* L.*, Anethum graveolens L., Rosa* × *damascena* Mill. and *Bunium persicum* B. Fedtsch.

Materials and Methods: In this study, the formulation of tablets for treatment of dyspepsia was evaluated. Accordingly, the mentioned plants were dried, powdered and mixed. After microscopic characterization, essential oil was prepared. Other analyses such as chromatography, gas chromatography connected to a mass spectrometer and standardization with the help of gas chromatography connected to a flame ionization detector was performed.

Results: The main ingredients of four plants were 68.16% Dillapiol and 5.6% Caryophyllene. After preparation of the drug via optimization of different formulations, stability tests were performed. The optimized tablet showed proper characterizations such as acceptable friability (less than 1%), average weight variation (less than 1%), average disintegration time (less than 22 minutes), hardness about 12.5±0.4, and average thickness about 6.7 ± 0.1 mm.

Conclusion: In conclusion, the amount of Caryophyllene in each tablet formulation was measured to be about 128 micrograms according to the essential oil extraction efficiency of the mixture of all four plants and the amount determined by gas chromatography connected to the flame ionization detector.

Keywords: Dyspepsia, *Anethum graveolens, Piper nigrum, Rosa*

Corresponding Author: eparhizkar@sums.ac.ir