A review of the medicinal plants effective on headache based on the ethnobotanical documents of Iran

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ABSTRACT

Headache is one of the ten most common reasons for consulting with a doctor. Healthcare community is seeking to identify nature-based drugs with no side effects and a higher efficiency for treating headache. This review article introduced the plants used to treat headache in ethnobotany and traditional culture of different regions of Iran. The key words consisting of ethnobotany, ethnopharmacology, ethnomedicine, phytopharmacology, traditional medicine, phytomedicine, and Iran, accompanied with headache, pain and analgesic, were used to search for relevant publications in PubMed, Web of Science, Scopus, Islamic World Science Citation Center, and Magiran. Overall, 59 medicinal plants from 29 families are used to treat headache specifically in Iranian traditional medicine. Most plants presented in this study were analgesic and anti-inflammatory, and affected the inflammation and cortical vascular contractile dysfunction. Because of the widespread use of traditional medicinal plants and wide acceptance of herbal drugs and traditional medicine, large studies in pharmacy and pharmacology areas are recommended to inform pharmaceutical industries.

Key words: Headache, Traditional medicine, Medicinal plants, Ethnobotany, Iran.

INTRODUCTION

Pain is one of the most common phenomena that forces people to refer health care centers. Pain affects life variably, and not only causes stress and discomfort but also leads to other stressors, such as treatment costs [1]. In most epidemiological studies, headache symptoms have been reported to be common with high frequency and to be caused by different factors such as tension or migraine. Headache is one of the ten most common reasons for consulting with a doctor [2, 3]. Chronic tension-type headache is characterized by frequent attacks, often daily, non-pulsatile and bilateral pain behind the head without nausea, vomiting or visual disturbances. Pain is described as a tight band wrapped around head. To relieve pain, different chemical and synthetic drugs with various side effects are commercially available [4]. Therefore, healthcare community is seeking to identify nature-based drugs with no side effects and a higher efficiency. Medicinal plants have been used to treat different diseases for many years. Further, therapeutic effects of these plants have already been investigated for neurological [5-11] and fungal [12-26] diseases, diabetes [27], respiratory diseases [28], children's diseases [29, 31], hyperlipidemia and obesity [32-34], liver diseases [35, 36], cardiovascular diseases [37], and other diseases [38-56]. These studies have caused at least one-fourth of conventional drugs to include at least one plant-derived component [57]. Ethnobotany is referred to the science of how people from a culture, ethnicity, or a region use the native plants of their regions. The findings of ethnobotanical studies could be greatly useful in other disciplines, particularly pharmacognosy, and indeed may assist in drawing the native people's knowledge about the use of plants to produce commercial products. Therefore,
gathering data on medicinal plants and the methods of using these plants in different regions is a valuable medical resource at present time, which helps to discover new drugs in pharmaceutical industry [58].

Iran community with long cultural and ethnic diversity, climate and weather diversity and more than 8000 species is a proper case of ethnomedical study. Therefore, this study was to identify and report the plants that are used to relieve and treat headache in traditional culture and ethnomedical of Iran's different regions.

MATERIALS AND METHODS

In this review article, the key words including ethnobotany, phytomedicine, ethnomedicine, phytopharmacology, ethnopharmacology, traditional medicine, and Iran combined with headache and paine were searched for in Web of Science, PubMed, Scopus, International Science Citation Center, ISD, and Magiran. Duplicate articles and the articles with no accessible full text were excluded from analysis.

RESULTS

The present study indicated that Iran's people from different cultures and regions such as Ghazvin, Sistan and Baluchistan, Turkmen Sahra, Kerman, Lorestan, Chaharmahal and Bakhtyari, hormozgan, Mashhad, Isfahan, and Kordestan province use 59 medicinal plants from 29 families according to traditional medicine to treat headache specifically. Most of these plants were from Lamiaceae families (figure1). Table 1 gives further data on the medicinal plants effective on headache.

![Figure 1: The number of medicinal species effective on headache in each family](image)

DISCUSSION

In this review article, 59 medicinal plants from 29 families were reported to treat headache specifically. This represents the richness of Iran's traditional medicine, which has long addressed the use of nature-based resources to treat various diseases such as headache.

Identifying various medicinal plants in different countries and studying their therapeutic and pharmaceutical effects has created new treatments for many diseases. Many species of medicinal plants are still unknown while they are used for treatment by indigenous people across the world. Such information is orally transmitted among different ethnic groups and from one generation to the next, which can gradually disappear in modern societies. Drawing useful hidden information from such societies may help to provide a detailed list of medicinal plants, their uses and how to use these plants.

Since many of the plants presented in this study contain effective analgesic, anti-inflammatory compounds, their effects in treating headache may be attributable to their analgesic, anti-inflammatory property [71-73]. Most of these
Table 1: Medicinal plants effective on headache in different subcultures and regions of Iran

<table>
<thead>
<tr>
<th>Number</th>
<th>Scientific name</th>
<th>Family</th>
<th>Local name</th>
<th>Used organs</th>
<th>Province</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hypericum scabrum L.</td>
<td>Hypericaceae</td>
<td>Golpar</td>
<td>Leaves, flowers</td>
<td>Alamut mountainous, Ghazvin Province</td>
<td>[64, 65]</td>
</tr>
<tr>
<td>2</td>
<td>Tanacetum polychelatum L.</td>
<td>Asteraceae</td>
<td>Mokhalesheh</td>
<td>Leaves, flowers</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>3</td>
<td>Achillea wilhelmi c.</td>
<td>Asteraceae</td>
<td>sarzard</td>
<td>Aerial parts</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>4</td>
<td>Centaurea Braceraerana DC.</td>
<td>Asteraceae</td>
<td>Balebord</td>
<td>Leaves, flower</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>5</td>
<td>Centaurea braceraerana DC.</td>
<td>Asteraceae</td>
<td>Shahaf</td>
<td>Leaves</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>6</td>
<td>Heliotropium europaeum L.</td>
<td>Boraginaceae</td>
<td>Kolomnu</td>
<td>Leaves, flower, seed, twigs</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>7</td>
<td>Mentha longifolia L.</td>
<td>Lamiaceae</td>
<td>Poden</td>
<td>Leaves, root</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>8</td>
<td>Mentha nozaffarani samad</td>
<td>Lamiaceae</td>
<td>Poden kuhi</td>
<td>Leaves, twig</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>9</td>
<td>Onosmigia persica (Bur.) Boiss.</td>
<td>Lamiaceae</td>
<td>Golder</td>
<td>Leaves, flower, dulse</td>
<td>Hormozgan province and Saravan region, Sistan and Baluchistan province</td>
<td>[66]</td>
</tr>
<tr>
<td>10</td>
<td>Pterocarpum Aucheri Jaub. &amp; Spach</td>
<td>Polygynaceae</td>
<td>Parand</td>
<td>Leaves, flower, root, stem</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>11</td>
<td>Salvadora persica L.</td>
<td>Salvadoraesc</td>
<td>Choosh</td>
<td>Leaves, root</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>12</td>
<td>Salvia Mirzaeem Rech. F. &amp; Esfand</td>
<td>Lamiaceae</td>
<td>Moortalkh</td>
<td>Leaves</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>13</td>
<td>Teucrium polium L.</td>
<td>Lamiaceae</td>
<td>Keriikh</td>
<td>Leaves, flowers, seed</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>14</td>
<td>Trichodesma africanaum (L.) R. Br.</td>
<td>Boraginaceae</td>
<td>Charmaaehang</td>
<td>Root, leaves</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>15</td>
<td>Ziziphus vulgaris L.</td>
<td>Rhamnaceae</td>
<td>Darchin</td>
<td>Leaves</td>
<td>Hormozgan province</td>
<td>[66]</td>
</tr>
<tr>
<td>16</td>
<td>Hypericum perforatum L.</td>
<td>Hypericaceae</td>
<td>Chayoti</td>
<td>Aerial parts</td>
<td>Maraveh Tappeh Region, North of Iran</td>
<td>[67]</td>
</tr>
<tr>
<td>17</td>
<td>Cinnamonum ceylanicum Nees</td>
<td>Lauraceae</td>
<td>Darchin</td>
<td>Bark</td>
<td>Mashhad, Razavi Khorasan province</td>
<td>[65]</td>
</tr>
<tr>
<td>18</td>
<td>Lawsonia inermis L.</td>
<td>Lythraceae</td>
<td>Hana</td>
<td>Leaves</td>
<td>Mashhad, Razavi Khorasan province</td>
<td>[65]</td>
</tr>
</tbody>
</table>
CONCLUSION

With a focus on the plants used to treat headache in Iran's traditional medicine, researchers are recommended to conduct studies on the plants from these families whose effects on headache have been investigated less frequently to develop anti-headache herbal drugs.

REFERENCES


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