Review

Use of herbal medicines by elderly patients: A systematic review

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ABSTRACT

Objectives: We aimed to survey the published literature for articles that describe the use of herbal supplements by elderly patients and to summarize important aspects of selected studies, including most commonly used supplements, study type, study location, and potential hazards of herbal supplement use.
Methods: Literature searches were conducted on three scientific/medical databases: Medline, Web of Science, and Scopus. Search results were examined for articles involving the use of herbal products in the elderly population that met selection criteria.
Results: Initial searches yielded 1297 articles. Of these original results, only 16 met specific selection criteria. Twelve (75%) of studies identified were performed in North America. Nine studies (56.25%) were conducted in the United States. Seven of the studies were cross-sectional (43.8%). The most commonly reported were gingko biloba, garlic, ginseng, aloe vera, chamomile, spearmint, and ginger. Of these, gingko and garlic are the most commonly used among community-dwelling elderly. Both of these supplements have the potential to interact with anticoagulants and produce bruising or bleeding problems.
Conclusions: The use of herbal supplements is common among the elderly, a population that takes a disproportionate share of prescription medications compared to that taken by younger populations. Among the problems uncovered by these studies was a lack of dialog between medical professionals and patients about the use of herbal supplements. Prescribers need to consider the use of herbal supplements and discuss the matter with their elderly patients when making decisions about pharmacological treatments.

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1. Introduction

People 65 years and older numbered about 759 million worldwide in 2010 (Magalhães, Paiva, & Aquino, 2011). This population has a large number of chronic illnesses and takes a large number of medications. The elderly consume three times more prescription drugs than their younger counterparts and are frequent users of nonprescription drugs, as well (Gormley, Griffiths, McCracken, & Harrison, 1993; Pollow, Stoller, Forster, & Duniho, 1994). Consequently, drug interactions pose a potential risk for community-dwelling elderly. Several authors have reported that unmonitored use of phytomedicines, herbal teas, or herbal supplements can be a serious risk in an elderly population that is commonly given prescription medications to control diseases such as hypertension, diabetes, and other age-related illnesses (Alexandre, Bagatini, & Simões, 2007; Alexandre, Bagatini, & Simões, 2008; Oliveira & Costa, 2004; Oliveira et al., 2006; Pollow et al., 1994).

Several studies have documented herbal supplement use in order to warn physicians and pharmacists of potential interactions between herbal supplements and prescriptions medicines among their patients (Arcury et al., 2007). On the other hand, there are few studies in elderly people on the use of complementary medicine and even fewer studies on herbal supplements. The use of herbal supplements is especially problematic in elderly people, because many do not report this practice to their physicians (Bruno & Ellis, 2005; Canter & Ernst, 2004; Dergal et al., 2002; Raji, Kuo, Snih, Sharaf, & Loera, 2005).

There is little research to examine the safety of herbal supplements, particularly when taken in conjunction with conventional drug therapies (Tachjian, Maria, & Jahangir, 2010). The purpose of this systematic review is to summarize research that relates to herbal supplement use among older people.

2. Methods

2.1. Search strategy and selection criteria

This was a descriptive review and the goal of data collection was to be as broad as possible. Studies were identified and reviewed that addressed the use of herbal supplements in the elderly. The literature review was undertaken in the following databases over the stated timeframes: Medline (April 2001 to April 2011), Scopus (November 2000 to November 2010) and Web of Science (January 2001 to January 2011). The search terms used were traditional medicine, alternative medicine, ethnopharmacology, complementary alternative medicine, medicinal plants, herbal medicines, the elderly, elderly, and aged in various combinations: ("traditional medicine" or "alternative medicine" OR "ethnopharmacology" or "complementary alternative medicine" and "older people" or "elderly" or "age") and ("herbal" or "herbal drugs" and "older people" or "elderly" or "age").

2.2. Identification and extraction of data

The screening process was performed in three stages (screening of title, abstract, and full text) by two researchers (JESS and TBS). If there was disagreement about inclusion, a third researcher (GCB) reviewed the article and resolved the discrepancy.

Titles and abstracts were compared with the following inclusion criteria in order to determine the relevance of the article: (i) the study was conducted in an elderly population, and (ii) the study involved the use of herbal supplements. Articles found in more than one database were considered only once (i.e., duplicates were excluded).

We reviewed the full text of original articles that met the following criteria: (i) the study was published in English, Spanish, or Portuguese, (ii) the study reported the use of herbal supplements, and (iii) the study was conducted in the elderly. Letters to the editor, meta-analyses, systematic reviews, conference proceedings, and articles that did not provide a summary of the study were excluded. The degree of agreement between the two researchers for the final selections was assessed using kappa statistics (k).

Articles that met the inclusion criteria for data extraction were carefully examined in the following variables: country, sample size, the herbal products used, type of study, methodology, main results, the main limitations, and conclusion.

3. Results

The initial screening identified 1297 titles using the terms traditional medicine, alternative medicine, ethnopharmacology, complementary alternative medicine, medicinal plants, herbal drug, older people, elderly, and aged. Of these, 49 were overlapping in two or more databases, and 183 were considered potentially relevant. After reviewing the abstracts, 49 studies were selected for the evaluation of the full text. The concordance between the two review authors on the article selection process was substantial ($k = 0.75$). At the end of the article selection process, only 16 met specific inclusion criteria (Fig. 1).

3.1. Country

The selected studies were conducted on three continents: North America, Europe, and Asia. Twelve (75.0%) of the studies identified were performed in North America (Arcury et al., 2007; Bruno & Ellis, 2005; Dergal et al., 2002; Kales, Blow, Welsh, & Mellow, 2004; Levine et al., 2009; Loera, Black, Markides, Espino, & Goodwin, 2001; Marliére, Ribeiro, Brandão, Klein, & Acurcio, 2008; Raji et al., 2005; Shahrokh, Lukaszuk, & Prawitz, 2005; Sternberg, Chandran, & Sikka, 2003; Yoon & Horne, 2006; Yoon, 2006; Zeilmann et al., 2003). Nine of these 16 studies (56.2%) were conducted in the United States. Only two studies (12.5%) were conducted in Europe (Gozum & Unsal, 2004; Stjernberg, Berglund, & Halling, 2006) and one study (6.2%) in Asia (Ng, Tan, & Kua, 2004) (Table 1).

3.2. Sample

The average age in the studies included in this review ($n = 16$) ranged from 71 to 80 years. The number of patients in the 16 studies analyzed ranged from 69 to 5860; the study that had 5860 patients was a population-based study. Over 50% of the participants in all the studies were women. In two studies