BJPS

Brazilian Journal of
Pharmaceutical Sciences
vol. 51, n. 2, apr./jun., 2015
http://dx.doi.org/10.1590/S1984-82502015000200018

Article

Review of the efficacy and safety of over-the-counter medicine

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Over-the-counter medicines are available without prescription because of their safety and effectiveness, to treat minor ailments and symptoms. The objective of the study was to analyze the availability and quality of systematic reviews published about nonprescription medicines, identifying the groups for which there are gaps in evidence. We identified published articles through the Cochrane Database of Systematic Review and MEDLINE, from the start of the database until May 2012, using the search terms "nonprescription drugs," "over the counter," and "OTC." We searched for articles that describe systematic reviews addressing the efficacy and safety of drugs dispensed without a prescription, according to the lists published by the Association of the European Self-Medication Industry and in Brazil, in the clinical conditions listed in Groups and Specified Therapeutic Indications. We included 49 articles, 18 articles were of moderate quality and 31 of high quality. Of the studies, 74.5% demonstrated efficacy in favor of the use of drugs evaluated. Of the 24 studies that evaluated safety, 21% showed evidence unfavorable to the drug. Overall, the evidence found in the studies included in the overview is favorable to the use of the drugs evaluated. However, there are gaps in evidence for some therapy groups.

Uniterms: Nonprescription medicines. Medicines/safety use. Self-medication. Evidence-based health.

Os medicamentos isentos de prescrição são disponíveis sem prescrição médica devido a sua efetividade e segurança, para tratar sintomas e males menores. O objetivo deste trabalho é revisar a disponibilidade e qualidade das revisões sistemáticas publicadas sobre medicamentos isentos de prescrição, identificando os grupos para os quais há lacunas de evidência. Foram identificados artigos publicados através da *Cochrane Database of Systematic Review* e MEDLINE (via PubMed) desde o início da base até maio de 2012, utilizando os termos "*nonprescription drugs*," "*over the counter*," "*OTC*". Foram procurados artigos que descrevessem revisão sistemática abordando a eficácia e segurança dos medicamentos dispensados sem prescrição, de acordo com as listas publicadas pela *Association of the European Self-Medication Industry* e no Brasil, nas condições clínicas constantes na lista de Grupos e Indicações Terapêuticas Especificadas. Foram incluídos 49 artigos, 18 artigos eram de qualidade moderada e 31 de alta qualidade. 74,5% dos estudos demonstraram eficácia favorável ao uso do medicamento avaliado. Dos 24 estudos que avaliaram segurança, 21% mostraram evidência desfavorável ao uso do medicamento. No geral, a evidência encontrada nos estudos incluídos nesta revisão é favorável ao uso dos medicamentos avaliados. Entretanto, há grupos terapêuticos para os quais há lacunas na evidência.

Unitermos: Medicamentos isentos de prescrição. Automedicação. Saúde baseada em evidências.

INTRODUCTION

According to the World Health Organization (WHO), over-the-counter (OTC) medicines are drugs approved by health authorities to treat minor ailments and symptoms. They are available without prescription because of their safety and effectiveness, if used in accordance with the guidelines available on the package inserts and on labels (ABIMIP, 2012).

In Brazil, this class of drugs is regulated by Board Resolution (RDC) of the National Agency for Sanitary Surveillance (ANVISA) Number 138 of May 29,

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2003, which provides for the sale category of products (ANVISA, 2003). According to ANVISA, OTC drugs can be registered as medicines that meet the conditions of the list of Groups and Specified Therapeutic Indications (GITE).

The Association of the European Self-Medication Industry (AESGP) has lists of nonprescription drugs marketed in 36 countries. These lists group the drugs according to their chemical, pharmacological, and therapeutic characteristics, according to the Anatomical Therapeutic Chemical (ATC) Classification System established by WHO. In this case, the symbol "OTC" means that at least one dosage or form of the drug has the legal status of nonprescription medication in some of the countries considered (ABIMIP, 2012).

Although OTC medicines are considered relatively safe drugs to be dispensed without a prescription, some studies, like the one conducted by Smith *et al.* (2012), call into question their efficacy and safety because of the lack of good quality trials. In this sense, evidence-based health (EBH) assumes that the behavior of professionals in clinical practice should be based on the best scientific evidence available at the time (Guaudard, 2008). Thus, EBH integrates clinical expertise with the ability to analyze and apply rational scientific information (Lopes, 2000; Manchikanti *et al.*, 2009).

With respect to studies of treatment, systematic reviews (SR) are considered currently to provide the highest level of evidence in relation to any clinical question (El Dib, 2007), as the SR and meta-analyses are useful for monitoring important innovations in healthcare. A systematic review of systematic reviews (overview) is a survey designed primarily to summarize data from several reviews, focusing on the effects of clinical interventions on a health condition; this is carried out in order to analyze the quality of systematic reviews and inform readers how failures may influence the results (Higgins, Green, 2011).

The aim of this study was to analyze the availability and quality of systematic reviews published about nonprescription medicines, identifying the groups for which there are gaps in evidence.

METHODS

Data sources

We performed the overview of systematic reviews, following a pre-established protocol, according to the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Moher *et al.*, 2009). A systematic search was performed on the Cochrane Database of Systematic Reviews (CDSR) and MEDLINE (via PubMed) over the period from the beginning of the database until May 2012. To seek systematic reviews in PubMed the following strategy was used for the search: *(systematic review*[tiab] OR meta-analysis[pt] OR meta-analysis[tiab] OR systematic literature review[tiab] OR "Cochrane Database Syst Rev"[Journal] OR (search*[tiab] AND (medline or embase OR peer-review* OR literature OR "evidence-based" OR pubmed OR IPA or "international pharmaceutical abstracts"))) NOT (letter[pt] OR newspaper article[pt] OR comment[pt]) AND hasabstract AND ("Nonprescription Drugs"[Mesh] OR "Nonprescription Drugs"[tiab] OR OTC*[tiab] OR "over the counter"[tiab])*. To format the Cochrane Library the following strategy was used: #1 (systematic review OR meta-analysis OR "evidence-based"):ti,ab,kw; #2 ("Nonprescription Drugs" OR OTC OR "over the counter"):ti,ab,kw; #1 AND #2.

Study selection

After obtaining the articles, all the steps of the process were performed by two independent reviewers (GCH and AISC), and discrepancies were resolved by consensus. In the absence of agreement, the assistance of a third reviewer (CJC) was requested. The process for selecting the studies followed the PRISMA model (Moher *et al.*, 2009): (a) all articles were analyzed based on their titles and abstracts (screening); (b) the articles deemed relevant were then fully analyzed by two reviewers, noting the inclusion and exclusion criteria (eligibility); and (c) articles that met all the criteria were included in the data collection (inclusion). Articles that generated questions during screening were included and passed through the eligibility stage for examination in full. In addition, we performed a manual search of references in all articles read in full. A search was not performed for unpublished articles or articles in conference proceedings. To be included, articles had to fulfill the following criteria: there was a systematic review, with or without meta-analysis; they addressed the efficacy and safety of nonprescription medicines considered according to lists released by AESGP and OTC drugs in Brazil; the clinical conditions were listed in the GITE list.

The exclusion criteria were: (a) items whose full text was not available through the databases or after contact with the author; (b) items that did not describe or were overviews of systematic reviews; (c) systematic reviews that included only prescription drugs; (d) articles that evaluated the use of medicinal herbs, vitamins, and supplements; (e) items that were defined as systematic

reviews, but whose full text did not comply with items 4, 7 and 9 of the PRISMA checklist (provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design; describe all sources of information in the search and date last searched; indicate the selection process of the study) (Moher *et al.*, 2009).

Data extraction

Data were extracted in duplicate and disagreements were resolved by consensus between the reviewers. At the stage of full reading a critical evaluation of the studies was made in order to verify the methodological quality of the reviews and possible sources of bias present in each review through the Assessment of Multiple Systematic Reviews (AMSTAR) instrument developed by Shea *et al.* (2009).

The AMSTAR total score was obtained by adding one point for each "yes" answer, while any other answer did not receive a point. The score ranged from 0 (zero), as the worst quality, to 11 (eleven) as the best quality. In addition, studies were categorized as proposed by the work of Mikton and Butchart (2009) in which a score from 0 to 4 indicated a review of low quality, from 5 to 8 indicated moderate quality, and from 9 to 11 indicated high quality. To collect data on efficacy and safety we used a second standard instrument developed by the authors.

RESULTS AND DISCUSSION

By searching the databases, 228 articles of potential relevance were found, but only 23 were included. The supplementary manual search selected 26 articles, so a total of 49 were included in the overview (see flowchart as shown in Figure 1). Of these, six articles were published in the 90s and others after 2000. The collected data from the included studies are shown in Table I.

Three articles were outdated and were therefore replaced by updating the manual search (Smith *et al.,* 2012). Among the articles included by supplementary manual search, two were withdrawn from The Cochrane Library for lack of update (De Sutter *et al.*, 2009; Taverner, Latte, 2009), as recommended by the Cochrane Collaboration (Higgins, Green, 2011).

In order to widen the scope of this overview, we included an extensive list of such OTC drugs marketed in 36 countries and in Brazil. Then, some of the medicines included are not OTC drugs in Brazil, for example, diclofenac, sumatriptan, and ranitidine are OTC medicines in some countries in Europe.

Considering the conditions encountered in clinical

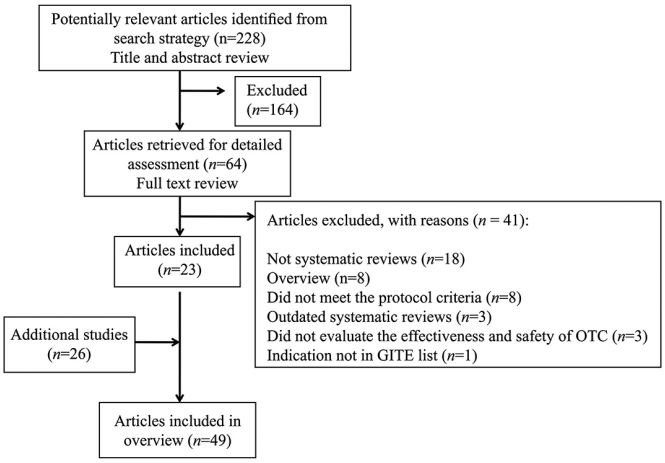

FIGURE 1 - Flowchart for the selection of systematic reviews included in the overview.

studies, it can be seen that most of the articles evaluated patients with acute or chronic pain (35.4%) or specifically migraine (14.6%). Studies to evaluate the efficacy and safety of medicines used to combat pain are extremely important, since self-medication in this context is a reality. Other clinical conditions assessed in this overview were quitting smoking (10.4%), cough (8.3%), symptoms of common cold (8.3%), fever and/or pain (8.3%), constipation (8.3%), fungal infections (4.2%), and dyspepsia (2.1%). Only one study (Jenkins, Costello, Hodge, 2004) assessed the safety of the drug against various clinical conditions.

Compared with the GITE list, various therapeutic groups and clinical indications have not been evaluated by systematic reviews, using the proposed strategy. There are, therefore, gaps for groups such as antidiarrheal, antispasmodic, antiparasitic, and antiseptic medicines in general.

Of the 24 studies that evaluated safety, five (21%) showed evidence unfavorable to the drug, due to significant side effects presented (Edwards *et al.*, 1999; Jenkins; Costello, Hodge, 2004; De Sutter *et al.*, 2009; Derry, Moore, 2012; Derry C. *et al.*, 2012). Data of security should be considered when dispensing medicines, especially in regard to OTC drugs, to encourage rational use of these medications.

With regard to studies on the efficacy of OTC medicines, 35 articles (74.5%) showed evidence favorable for the use of the intervention in at least one of the groups of patient studied. Three studies (6.4%) did not show evidence favorable to the drug's efficacy. In one of these, the use of antihistamines was not proven effective in the treatment of common cold symptoms and showed more side effects compared to placebo (De Sutter *et al.*, 2009). Another

TABLE I - Main characteristics of systematic reviews on OTC drugs

References	Journal	Health problem or group of patients in study	Design	Studies included	Drugs or classes of drugs evaluated	Meta-analyses	Evidence favorable to the drug's efficacy	Evidence favorable to the drug's safety	Score AMSTAR
Koes *et al.* (1997)	Annals of the Rheumatic Diseases	Low back pain	RCT	26	NSAIDs	Yes	Yes	–	8
Moore *et al.* (1998)	British Medical Journal	Acute and chronic pain	RCT	86	Topical NSAIDs	Yes	Yes	Yes	10
Edwards *et al.* (1999)	Pain	Postoperative pain	RCT	72	Acetylsalicylic acid	Yes	Yes	No	8
Van Tulder *et al.* (2003)	Cochrane Database of Systematic Reviews	Low back pain	RCT	30	Carisoprodol; chlorzoxazone; orphenadrine	Yes	Yes	–	9
Bjordal *et al.* (2004)	British Medical Journal	Osteoarthritic knee pain	RCT	23	NSAIDs	Yes	Yes (short-term use)	–	8
Mason *et al.* (2004a)	British Medical Journal	Acute and chronic pain	RCT	12	Topical rubefacients (salicylates)	Yes	Yes (acute pain)	Yes	9
Mason *et al.* (2004b)	BioMed Central Family Practice	Acute pain	RCT	36	Topical NSAIDs	Yes	Yes	Yes	9
Richy *et al.* (2007)	International Journal of Clinical Practice	Rheumatoid arthritis (outcome pain)	RCT	14	Flurbiprofen	Yes	Yes	Yes	10
Toms *et al.* (2008)	Cochrane Database of Systematic Reviews	Postoperative pain	RCT	51	Paracetamol	Yes	Yes	Yes	9
Derry C. *et al.* (2009a)	Cochrane Database of Systematic Reviews	Postoperative pain	RCT	15	Naproxen	Yes	Yes	Yes	9
Derry C. *et al.* (2009b)	Cochrane Database of Systematic Reviews	Postoperative pain	RCT	72	Ibuprofen	Yes	Yes	Yes	9
Derry P. *et al.* (2009)	Cochrane Database of Systematic Reviews	Postoperative pain	RCT	15	Diclofenac	Yes	Yes	Yes	9
Matthews *et al.* (2009)	Cochrane Database of Systematic Reviews	Acute and chronic pain	RCT	16	Topical rubefacients (salicylates)	Yes	No evidence	Yes	9
Massey *et al.* (2010)	Cochrane Database of Systematic Reviews	Acute pain	RCT	47	Topical NSAIDs	Yes	Yes	Yes	10

TABLE I - Main characteristics of systematic reviews on OTC drugs (cont.)

References	Journal	Health problem or group of patients in study	Design	Studies included	Drugs or classes of drugs evaluated	Meta-analyses	Evidence favorable to the drug's efficacy	Evidence favorable to the drug's safety	Score AMSTAR
Moll *et al.* (2011)	Cochrane Database of Systematic Reviews	Postoperative pain	RCT	4	Mefenamic acid	Yes	Yes	–	9
Derry, Moore (2012)	Cochrane Database of Systematic Reviews	Postoperative pain	RCT	68	Acetylsalicylic acid	Yes	Yes	No	9
Derry S. *et al.* (2012a)	Cochrane Database of Systematic Reviews	Chronic musculoskeletal pain	RCT	34	Topical NSAIDs	Yes	Yes	Yes	9
Oldman *et al.* (2002)	Pain	Migraine headaches	RCT	48	Sumatriptan; acetylsalicylic acid + metoclopramide; naratriptan	Yes	Yes	–	8
Suthisisang *et al.* (2007)	The Annals of Pharmacotherapy	Migraine headaches	RCT	13	Ibuprofen	Yes	Yes	–	10
Derry S. *et al.* (2010)	Cochrane Database of Systematic Reviews	Migraine headaches	RCT	10	Paracetamol with or without antiemetic	Yes	Yes	Yes	9
Kirthi *et al.* (2010)	Cochrane Database of Systematic Reviews	Migraine headaches	RCT	13	Acetylsalicylic acid with or without antiemetic	Yes	Yes	Yes	9
Rabbie *et al.* (2010)	Cochrane Database of Systematic Reviews	Migraine headaches	RCT	9	Ibuprofen with or without antiemetic	Yes	Yes	Yes	9
Derry C. *et al.* (2012)	Cochrane Database of Systematic Reviews	Migraine headaches	RCT	61	Sumatriptan	Yes	Yes	No	9
Derry S. *et al.* (2012b)	Cochrane Database of Systematic Reviews	Migraine headaches	RCT	5	Diclofenac with or without antiemetic	Yes	Yes	Yes	9
Hughes *et al.* (2003)	Tobacco Control	Quit smoking	RCT; quasi-experimental trial	7	NRT	Yes	Yes	–	8
Etter, Stapleton (2006)	Tobacco Control	Quit smoking	RCT	12	NRT	Yes	Yes	–	9

TABLE I - Main characteristics of systematic reviews on OTC drugs (cont.)

References	Journal	Health problem or group of patients in study	Design	Studies included	Drugs or classes of drugs evaluated	Meta-analyses	Evidence favorable to the drug's efficacy	Evidence favorable to the drug's safety	Score AMSTAR
Walsh (2008)	Drug and Alcohol Review	Quit smoking	RCT; observational studies	12	NRT	No	No	–	7
Hughes *et al.* (2011)	Nicotine & Tobacco Research	Quit smoking	Observational studies	18	NRT	No	Inconclusive	–	7
Stead *et al.* (2012)	Cochrane Database of Systematic Reviews	Quit smoking	RCT; quasi-experimental trial	150	NRT	Yes	Yes	–	10
Schroeder, Fahey (2002a)	British Medical Journal	Cough in adults	RCT	15	Antitussives; expectorants; mucolytics; antihistamine-decongestant combinations; other drug combinations	No	Inconclusive	–	9
Schroeder, Fahey (2002b)	Archives of Disease in Childhood	Cough in children	RCT	6	Antitussives; expectorants; mucolytics; antihistamine-decongestant combinations; other drug combinations	No	No	–	8
Chang *et al.* (2012)	Cochrane Database of Systematic Reviews	Cough in adults and children	RCT	4	Antitussives; mucolytics	Yes	Inconclusive	–	10
Smith *et al.* (2012)	Cochrane Database of Systematic Reviews	Cough in adults and children	RCT	26	Antitussives; expectorants; mucolytics; antihistamine-decongestant combinations; other drug combinations	No	Inconclusive	–	9
Kollar *et al.* (2007)	Clinical Therapeutics	Alleviating nasal symptoms of common cold	RCT	8	Phenylephrine	Yes	Yes	–	6
De Sutter, *et al.* (2009)	Cochrane Database of Systematic Reviews	Alleviating nasal symptoms of common cold	RCT	32	Antihistamines	Yes	No	No	9

TABLE I - Main characteristics of systematic reviews on OTC drugs (cont.)

References	Journal	Health problem or group of patients in study	Design	Studies included	Drugs or classes of drugs evaluated	Meta-analyses	Evidence favorable to the drug's efficacy	Evidence favorable to the drug's safety	Score AMSTAR
Taverner & Latte (2009)	Cochrane Database of Systematic Reviews	Alleviating nasal symptoms of common cold	RCT	7	Nasal decongestants (oral and topical)	Yes	Yes (adults) No evidence (children)	Yes	9
De Sutter *et al.* (2012)	Cochrane Database of Systematic Reviews	Alleviating symptoms of common cold	RCT	27	Oral antihistamine-decongestant-analgesic combinations	Yes	Yes (adults) No evidence (children)	–	10
Purssell (2002)	British Journal of Community Nursing	Fever in children	RCT	8	Ibuprofen; paracetamol	Yes	Yes	Yes	8
Perrott *et al.* (2004)	Archives of Pediatrics & Adolescent Medicine	Fever or pain in children	RCT	17	Ibuprofen; paracetamol	Yes	Yes	Yes	8
Meremikwu, Oyo-Ita (2009)	Cochrane Database of Systematic Reviews	Fever in children	RCT; quasi-experimental trial	12	Paracetamol	Yes	Inconclusive	–	9
Southey *et al.* (2009)	Current Medical Research and Opinion	Fever or pain in children	RCT; observational studies	36	Ibuprofen; paracetamol	Yes	–	Yes	7
Tramonte *et al.* (1997)	Journal of General Internal Medicine	Chronic constipation	RCT	36	Bulk-producing agents; irritants or stimulants; osmotically active agents; surfactants	No	Yes	-	7
Petticrew *et al.* (1999)	British Journal of General Practice	Chronic constipation in elderly	RCT	19	Bulk-producing agents; irritants or stimulants; osmotically active agents; surfactants	No	No evidence	-	7
Hurdon *et al.* (2000)	Journal of Pain and Symptom Management	Chronic constipation	RCT	4	Docusate	No	No evidence	-	8
Jones *et al.* (2002)	Digestive Diseases and Sciences	Chronic constipation	RCT	11	Bulk-producing agents; irritants or stimulants; osmotically active agents; surfactants	Yes	Inconclusive	-	7
Hart *et al.* (1999)	British Medical Journal	Fungal infections of the skin and nails of the feet	RCT	67	Topical antifungal	Yes	Yes	-	8

TABLE I - Main characteristics of systematic reviews on OTC drugs (cont.)

References	Journal	Health problem or group of patients in study	Design	Studies included	Drugs or classes of drugs evaluated	Meta-analyses	Evidence favorable to the drug's efficacy	Evidence favorable to the drug's safety	Score AMSTAR
Crawford, Hollis (2007)	Cochrane Database of Systematic Reviews	Fungal infections of the skin and nails of the feet	RCT	67	Topical antifungal	Yes	Yes	-	10
Tran *et al.* (2007)	Alimentary Pharmacology & Therapeutics	Dyspepsia	RCT	14	Histamine-2 receptor antagonists; alginates; antacids	Yes	Yes	-	9
Jenkins *et al.* (2004)	British Medical Journal	Induction of asthma	RCT	21	Acetylsalicylic acid	No	-	No	8

Abbreviations used: NSAIDs, Non-steroidal anti-inflammatory drugs; RCT, randomized controlled trial; NRT, nicotine replacement therapy.

study evaluating the efficacy of nicotine replacement therapy (NRT), without prescription, concluded that the superiority of OTC NRT over unaided smoking cessation had not been demonstrated convincingly (Walsh, 2008). Likewise, the use of medications for coughs were reported in children and the results do not demonstrate greater efficacy than a placebo, noting the small number of trials found (Schroeder, Fahey, 2002b). The other three studies related to treatment of coughs showed no good evidence in favor of the use of these medicines (Schroeder, Fahey, 2002a, Chang, Cheng, Chang, 2012; Smith *et al.*, 2012). Moreover, some systematic reviews were inconclusive or showed no evidence for the use of the drug, suggesting more studies.

Concerning the methodological quality of systematic reviews, according to the evaluation by the AMSTAR instrument, 18 reviews were of moderate quality (namely, AMSTAR score of 5-8), 31 were of high quality (9-11), and no reviews received a score of 0 to 4, which indicates a review of low quality. These data suggest that the methodological quality of reviews showed that the majority of the published studies are of good quality. Moreover, we noticed that all the systematic reviews conducted by the Cochrane Collaboration were of high quality.

Among the items examined those that mostly did not receive the answer "yes" were item numbers 10 and 11 of the AMSTAR instrument. Item 10 verifies that the likelihood of publication bias was assessed, which is the tendency for studies with positive results to be more often published than studies with negative results (Zhou, Obuchowski, McClish, 2002). The possibility of the occurrence of this type of bias was not reported in 42 articles (86%). Item 11 evaluates whether a conflict of interest was included in the study; namely, potential sources of support should be clearly recognized in both the systematic review and in the studies included (Shea *et al.*, 2009). Although some studies have reported sources of support, there was no explicit statement of this in 32 (65%) of the reviews. Similar results were found in the literature (Santaguida *et al*., 2013; Remschmidt, Wichmann, Harder, 2014), demonstrating the need to improve the description of potential conflicts of interest and publication bias.

Relating the quality of studies to clinical conditions, we note that all studies on constipation showed moderate methodological quality. The same occurred with three studies (of four) evaluating fever and/or pain and three studies (of five) on quitting smoking. In this case, in addition to the items described above, some reviews failed in describing other items, such as showing a list of excluded studies, describing if the studies undertook duplicate study selection and extraction, and rarely undertaking meta-analyses.

Regarding the design of the studies found in the systematic review, in just one review (Hughes *et al.*, 2011) did the design not include a randomized clinical trial (RCT). According to the author, prospective controlled trials are the best way to assess effectiveness by determining the effect of therapy on the actual conditions of use. Another four studies, in addition to RCTs, employed non-randomized studies (Hughes *et al.*, 2003), observational studies (Southey, Soares-Weiser, Kleijnen, 2009), quasi-randomized trials (Meremikwu, Oyo-Ita, 2009; Stead *et al.*, 2012), and cohort studies (Walsh,

2008). The Cochrane Collaboration focuses primarily on systematic reviews of randomized clinical trials because they are more likely to provide unbiased information than other study designs (Higgins, Green, 2011).

The sale of medicines without the need to present a prescription suggests that they are safe and effective. Thus, systematic reviews, which correspond to the highest level of evidence to evaluate the efficacy and safety of nonprescription medicines, are essential contributions to their rational use. The present study examined 49 systematic reviews published up to May 2012, which show no evidence of efficacy or safety for at least three of the nine clinical conditions assessed. This leads us to think that the use of such medicines in certain clinical conditions is questionable.

Our overview also presents some limitations. In our search strategy, we chose a query with greater specificity, instead of a higher sensitivity, for considering the large number of OTC drugs marketed. Moreover, many of the authors of systematic reviews on OTC medications do not use general descriptors such as "nonprescription drugs" or "OTC," which makes the location of these in databases difficult. In order to minimize the possible omission of studies due to this fact, we conducted a manual search of work in the bibliographies of all the studies read in full. Finally, we constrained the inclusion of systematic reviews only to those health conditions considered treatable with OTC medications. This was necessary, considering the existence of several reviews involving OTC drugs for conditions which require prior medical diagnosis, which would be outside the scope of our work. In order to avoid biases related to this aspect, we included an extensive list of such OTC drugs marketed in 36 countries and in Brazil.

CONCLUSION

The methodological quality of systematic reviews of nonprescription medicines, according to studies included, is moderate to high. Thus, the quality of the available evidence in these is good enough for their use in clinical practice. The evidence found in the studies included in the overview is favorable to the use of most of the drugs evaluated, like topical antifungal, analgesics, and anti-inflammatory drugs. However, some systematic reviews were inconclusive or showed no evidence for the use of the drug, suggesting more studies, as in the case of nicotine replacement therapy without prescription, medications for coughs, and chronic constipation. Then, there are therapy groups for which there are gaps in evidence, necessitating the need for studies in this area.

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Received for publication on 02nd May 2014
Accepted for publication on 12th November 2014