



LITERATURE REVIEWS

The clinical efficacy of curcumin-containing nutraceuticals: An overview of systematic reviews

Carole Jackson (Dr)

King's College London

Pagano, E. Romano, R. Izzo, A.A. Borrelli, F. (2018) *Pharmacological Research*, 134, August, 79-91. <https://doi.org/10.1016/j.phrs.2018.06.007>

Background

There is a brief introduction to the use of Curcumin containing nutraceuticals (CNNs), derived from the root of turmeric, in traditional Indian medicine with a short description of the compounds used. The authors identify that clinical trials have been carried out to assess the efficacy of CCNs for many years with more recent systematic reviews with or without meta-analysis being published. However, the evidence from these systematic reviews has not yet been evaluated.

Aim

The aim was to summarize and critically appraise all systematic reviews and meta-analysis that evaluated the clinical efficacy of CCNs for any condition.

Data Sources

Searches were conducted in Web of Science (version 5.29 which included MEDLINE and others), Google Scholar, Scopus and Cochrane library up to December 2017. The search was limited to systematic reviews and meta-analysis that had the key terms in the title and evaluated the effects of turmeric or its active ingredients on any type of disease, reported the methods used to perform the systematic reviews and were available in full text. Narrative reviews were excluded as were systematic reviews that did not meet the inclusion criteria nor focused specifically on CCNs.

Data extraction

Two authors extracted the data from the systematic reviews not from the primary studies; disagreements were resolved by the two remaining authors. Data collected included treatment, type of disease, outcome, study design, sample size, duration, quality and limitations of included studies and systematic reviews, adverse events and overall

scores of quality tools.

Quality assessment

The quality of the systematic reviews was independently assessed by two of the authors using AMSTAR and OQAQ. An overview of AMSTAR and OQAQ is provided.

Results

The search strategy initially identified 1023 potentially relevant papers, however following full screening 22 systematic reviews, 15 of which incorporated meta-analysis, were included in the review. Included papers were published between 2003 and 2017, in peer reviewed journals, there was one Cochrane review. The characteristics and AMSTAR and OQAQ scores of the papers are detailed in a large table. The methodological quality of the included reviews varied widely, 4 of the studies were classified as high quality with 16 as medium quality and the remaining 2 as low quality. From the papers there is some evidence CCNs may be effective in inflammatory conditions such as arthritis related diseases and inflammatory bowel disease, in reducing lipid levels in cardiovascular disease and in skin disease. The authors support cautious preliminary results on the efficacy in depression due to the limited number of studies, patients and flawed protocol design in some retrieval studies. They also report no efficacy observed in Alzheimer's disease. There were no specific safety concerns related to CCNs.

Relevance to practice

CCNs appear to be safe to use and this overview suggests that they may be useful for several conditions including arthritis-related diseases. However uncertainty remains due to the poor quality and high risk of bias in many primary trials and the less than high quality of the majority of the included systematic reviews. The authors recommend large rigorous Randomized Controlled Trials (RCTs) to fully explain and expose the potential of CCNs.

Efficacy of Curcumin and Boswellia for knee osteoarthritis: Systematic review and meta-analysis

E-mail address: carole.jackson@kcl.ac.uk.

<https://doi.org/10.1016/j.ijotn.2019.03.001>

Bannuru, R.R. Osani, M.C. Al-Eid, F. Wang, C. (2018) *Seminars in Arthritis and Rheumatism*, 48, 3, 416-429. <https://doi.org/10.1016/j.semarthrit.2018.03.001>

Background

A good overview of the history of Curcumin and Boswellia use over thousands of years is provided along with a detailed description of the part these phytochemicals could play in the inflammatory process. The suggestion is that they could provide a therapeutic benefit; not just in terms of pain relief but also that they may demonstrate superiority over some non-steroidal anti-inflammatory drugs (NSAID). However, there are few Randomized Controlled Trials (RCT), that test the efficacy of these phytochemicals in humans with knee Osteoarthritis (OA) and the authors identify that recent meta-analyses of the efficacy and safety of Curcumin and Boswellia were flawed.

Aims

A systemic review and meta-analysis to assess the efficacy and safety of Curcumin and Boswellia alone or in combination, in comparison to placebo and NSAIDs for knee OA.

Data sources

Searches were conducted in Medline, EMBASE, Google Scholar, Web of Science and Cochrane Database up to February 2018. The search was limited to RCTs in human subjects with OA who had been treated with Curcuminoid or Boswellia preparations. Details are provided on study selection, data extraction and outcome definitions. Outcomes of interest included pain, function, use of protocol rescue medication, adverse events leading to discontinuation, serious adverse events and gastrointestinal adverse events.

Data analysis

Standard mean differences and 95% confidence intervals (CI) based on mean change from baseline to study end were calculated for all relevant outcomes, and meta-analysis was conducted using random effects model. Odd ratios were calculated for dichotomous outcomes. Heterogeneity was evaluated using the I^2 statistic.

Evidence grading

Evidence was graded by two independent reviewers evaluating quality for each outcome using GRADE quality assessment criteria.

Results

Fourteen studies were included in the systematic review but only 11 RCTs were eligible for meta-analysis. Included studies were published between 2003 and 2018 with total samples sizes of 30-331, with duration range between 4 to 12 weeks. Overall quality was poor, and several biases are reported. There is a clear risk of bias summary and bias distribution graph. Included studies compared Curcuminoid against placebo, Boswellia against placebo and Curcuminoid against NSAID. The analysis identifies that both Curcuminoid and Boswellia formulations were significantly more effective than placebo in pain relief and functional improvement of patients with OA. There were no statistically significant results in terms of safety outcomes between Curcuminoid, Boswellia and placebo. No statistically significant differences were noted between Curcuminoid and NSAIDs in efficacy outcomes although participants receiving Curcuminoid were statistically less likely to experience gastrointestinal adverse events.

Discussion

Comparisons are made to previous meta-analysis with differences in results considered, taking into account the strict inclusion criteria this analysis applied. The authors conclude that the generalizability of their results may be limited by the quality, sample size and duration of the included studies.

Relevance to clinical practice

While the results suggest that Curcuminoid and Boswellia could be a valuable addition to the treatment of patients with OA of the knee, the body of evidence is not currently sufficient to make significant recommendations for clinical practice. Further high quality large RCTs are required to compare these phytochemicals against other OA treatments.

'You feel like you haven't got any control': A qualitative study of side effects from medicines

O'Donovan, B. Rodgers, R.M. Cox, A R. Krska, J. (2019) *Journal of Patient Safety and Risk Management*, 0(0) 1–12. OnlineFirst. <https://doi.org/10.1177/2516043518821499>

Aims

The specific study aim was to investigate how people identified and managed side effects from their medicines.

Background

The study highlights the problem presented by an aging population for whom multiple medications may be needed. The use of multiple medicines, which has contributed to the increase in reported adverse drug reactions (ADR) or side effects and adverse drug events (ADE), is identified and there is also a discussion on the significant impact these reactions can have on patients' lives. Interestingly there is some evidence that suggests that the elderly and those with low economic status are more likely to experience severe effects and these risk factors add to the frequent morbidity and mortality associated with side effects. The study identifies a gap in qualitative research and the difficulty of identifying those who have suffered from side effects which have impacted on their daily lives.

Design

A qualitative design using in-depth interviews.

Sample

Participants were recruited through a survey distributed in community pharmacies. The final purposive sample comprised of 10 females and 5 males, from a total of 230 survey responses. All participants were aged 18 or over who had experienced side effects from their medicines.

Data collection

Semi structured interviews were conducted using topic areas and a topic guide which had been developed from the existing research and the data collected from the original survey. Interviews were audio recorded.

Data analysis

The interview tapes were transcribed verbatim and stored using NVivo data management programme. Thematic analysis was conducted guided by the work of Braun and Clarke. Coding was discussed with an

expert researcher and emergent themes were identified, reviewed and refined to create a thematic map. Data saturation was said to be achieved and recruitment ceased.

Results

Side effect experience, identification, adherence, information use, coping and body awareness were the six main themes identified. Within “side effect experience” the participants all related the multi-dimensional nature of the experience of side effects and described a wide range of physical and psychological symptoms which had both explicit and implicit impacts on their lives. Other themes recognized a system of identification and allocation of the significance of side effects, based on constructed cognitive processes. Various coping strategies, which included information seeking, social support and non-adherence behaviours, were also identified.

Relevance to clinical practice

Medication beliefs, and cognitive and behavioural process that are influenced by these psychological and symptomatic behaviours, play a role in medication adherence. They also play a role in how patients manage side effects. The authors identified that some of the themes corresponded with an established model of illness behaviour which had 3 main cognitive constructs of representation, coping strategies and appraisal and could provide an effective framework to investigate how patients identify and manage their side effects.

Predictive factors for the formation of tape blisters: An observational, prognostic prospective study

Pierboni, L. Fabbri, E. Santullo, A. Ambrosi, E. Chiari, P. (2019) *International Journal of Nursing Studies*, 91, 1-5.

Background

A brief description of the appearance of tape blisters and the implications they may have on wound healing is provided. Much of the existing literature carried out with knee and hip surgery patients has focused on the type of dressing used as the most predictive factor. Research has also suggested that other predisposing factors, such as age, nutritional status smoking surgery type and others, are the main predictors, but this has not been proven satisfactorily. These predisposing factors might play a role in blister formation, but a direct link has not been demonstrated. Thus, the results are conflicting, and a case is made to analyse both intrinsic and extrinsic factors to enable the prognostic value to be quantified.

Aims

The purpose of the study was to evaluate the incidence of tape blister formation after surgery and to identify the main prognostic factors.

Design

A multi-centred cohort study.

Participants

Participants were recruited from the orthopaedic, general and specialist surgery departments in three Italian hospitals. All participants were age 18 or over and were undergoing elective or urgent laparotomic surgery. Exclusion criteria were set and rationalized.

Data collection

Intrinsic and extrinsic variables were collected on 1002 participants. Intrinsic variables included age, gender, allergies, BMI and co-morbidities. Body temperature and oedema peripheral to the surgical site were recorded 24 hours post-surgery. Extrinsic factors recorded at admission included cortisone therapy at home, hair removal and hair removal tools. Post-surgery extrinsic factors were recorded including surgical site, anaesthesia, type of dressing, suture and drain if applicable.

The peri-incisional area was observed for each patient to verify the presence or absence of tape blister for a minimum of 3 times. Wounds were checked first 24 hours if the dressing was heavily soaked, then a maximum of once a day at dressing change and during the post-operative check approximately 7 days after discharge. Number and dimensions of any blisters were recorded.

Data analysis

Descriptive statistical analysis was carried out, followed by both univariate analysis of all the different variables chosen and logical regression model for multivariate analysis to identify the variables which independently influenced the onset of tape blisters. The final data analysis was performed using STATA program and level of significance was set at 0.05.

Results

Univariate analysis showed the factors associated with the outcomes were gender, BMI, execution of hair removal, removal methods, surgical site, surgical classification, position of drain and oedema in the peri-incisional site. Significant variables from the univariate analysis were included in multivariate analysis and showed risk of tape blisters increased by nearly nine-fold in chest surgery and doubled in upper limb and joint surgery. Being female, having a drain and a high BMI were also predictors in tape blister formation. The incidence of tape blister formation was 10.58% and dressing type was not identified as an associated risk factor.

Implications for practice

This paper adds further evidence to the often-conflicting dialogue around wound care and tape blister formation. Prognostic factors of specific surgical sites, use of drains, female gender and high BMI were identified and may be helpful in guiding care and risk assessment. However, in this study no significant links were made between type of dressing and blister formation which is in sharp contrast to previous work and the authors suggest further research could verify this.