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EFFICACY OF GLUCOSAMINE HYDROCHLORIDE OR SPECIALIZED ROSEHIP POWDER IN OSTEOARTHRITIS PATIENTS: AN INDIRECT COMPARISON META-ANALYSIS

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Abstract:

Purpose:

In the absence of randomized trials with head-to-head comparisons of Glucosamine Hydrochloride (GHC) and Specialized Rosehip Powder (SRP), we subjected the pain reducing effect of GHC and SRP therapy for OA to an indirect comparison meta-analysis.

Methods:

From published meta-analyses we know that heterogeneity among trials of glucosamine for pain in OA is larger than would be expected by chance - an inconsistency making conclusions difficult and differences were shown between various preparations of glucosamine (Vlad SC, A&R 2007). On the other hand, a recent meta-analysis of the efficacy associated with the use of a patented SRP, showed homogeneity (Christensen R, OAC 2008). It is of a large interest to the scientific community to find indications of effect on pain of such preparations in the available literature. Randomized controlled trials (RCTs) included in the original above mentioned meta-analyses were considered eligible for inclusion; i.e. only randomized, double-blind, placebo-controlled trials. The standardized mean difference (SMD) for each study was applied as effect size. We calculated the I^2 index to evaluate the inconsistency via the percentage of total variation across trials that is attributable to heterogeneity rather than to chance. We used standard random-effects meta-analysis as default option (Review Manager, v. 5.0.18). The estimated difference in efficacy of GHC and SRP was analyzed using the Bucher approach, leading to an indirect comparison via the two direct effect sizes.

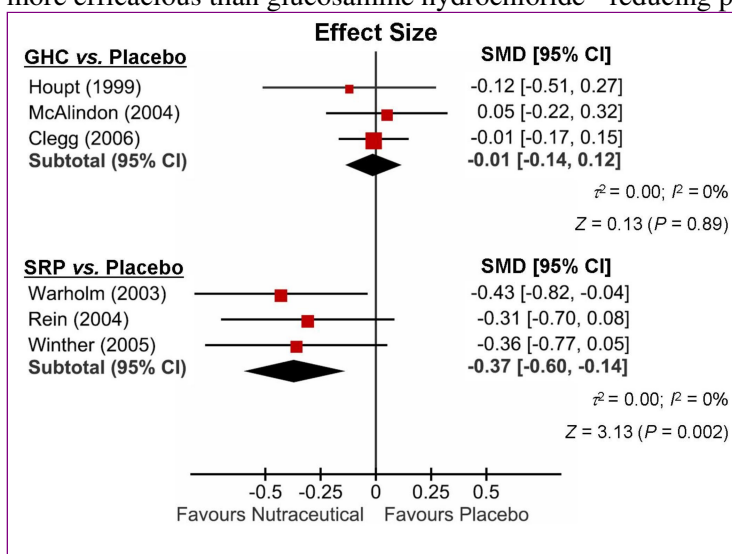
Results:

Three studies included for the GHC analysis (including 933 patients in total) consistently showed no clinical effect (ES= -0.01 [-0.14, 0.12], P=0.89, $I^2=0\%$). Whereas the three studies using SRP (287 patients in total) showed a consistent and significant clinical improvement compared to placebo (SMD= 0.37 [-0.60, -0.14], P=0.002, $I^2=0\%$). When comparing these two estimates it was evident that SRP was superior to GHC (SMD=0.36 [0.10, 0.62], Z= 2.67, P=0.008).

Conclusions:

Based on available RCTs it was evident that glucosamine hydrochloride had no effect on pain in OA patients compared to placebo. The patented rosehip preparation tested in RCTs showed a statistical- and clinically-significant effect compared to placebo. We conclude that based on the available

evidence from meta-analyses, an indirect comparison showed the specialized rosehip powder to be more efficacious than glucosamine hydrochloride - reducing pain in osteoarthritis patients.



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Category (Complete): Therapy - Non-Pharmacologic

Keyword (Complete): Meta-Analysis ; Natural Product ; Pain ; Glucosamine

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