April 2013 on thirty knees of twenty-four patients suffering from medial compartment osteoarthritis associated with varus deformity.
The patients were allocated randomly (single-blinded) in two groups; where fifteen knees of group (I) underwent high tibial osteotomy using the OWO technique, while those of group (II) underwent the procedure using the HCO technique.
Two important parameters were compared; the posterior tibial slope in lateral radiographs using the anatomical proximal tibial axis and the patellar height using the Blackburne-Peel method; to assess the accuracy of the procedure in the sagittal plane.
Results: OWO had proven lower accuracy than HCO as regard the change in tibial slope ($P = 0.001$ and 0.3 respectively), while both techniques preserved patellar height almost unchanged with optimizing the procedures' techniques ($P = 0.4$ and 0.6 respectively).
Conclusion: HCO technique for osteoarthritic knees associated with varus deformity can give more accurate results for the sagittal limb alignment and this may improve the long term results of the procedure and facilitate future TKR.

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CLINICAL EFFICACY OF PLASMA RICH IN GROWTH FACTORS INTRA-ARTICULAR INFILTRATIONS IN THE TREATMENT OF KNEE OSTEOARTHRITIS: A SYSTEMATIC REVIEW

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Purpose: Osteoarthritis (OA) is a multifactorial polygenic degenerative disease, mechanically induced, and whose progression might be attributable to pro-inflammatory signaling molecules (cytokines) overall leading to the synovial joint failure as organ, and where pain represents the clinical hallmark of disease. This study reviews the efficacy of the autologous biological therapy, Plasma rich in growth factor (PRGF) to regenerate tissue and reduce pain in patients with knee OA.
Methods: Using the interchangeable terms PRGF, or Plasma rich in growth factors, or autologous growth factors, or platelet rich plasma, and knee osteoarthritis, a comprehensive literature search was conducted using OVID, EMBASE, PASCAL, PubMed/MEDLINE electronic databases and the Cochrane Central Register of Controlled Trials on October 31, 2013. Studies were considered suitable if the participants were over 18 years and had been clinically diagnosed with OA of the knee according to the American College of Rheumatology. The studies had to include a PRGF group and a control group (Hyaluronic acid, placebo, or another PRP), and the design had to be a comparative retrospective study or randomized controlled trial (RCT). Pre- and post-treatment measures of joint pain, reduced function and stiffness were evaluated using WOMAC, KOOS, IKCD, LEQUESNE, or OMERAT OARSI responders, with a follow-up of at least 4 weeks. Studies conducted using methods other than PRGF (such us double centrifugation, presence of leukocytes, platelet activation by bovine thrombin) to elaborate the product treatment group, were excluded. Outcomes were categorized by types and by pre- and post-treatment numbers, and median, or mean values (SD) were extracted. Dichotomic variables were expressed by determination of absolute and relative frequencies and the measure of effect was calculated by ascertaining the relative risk or odds ratio with their respective 95% confidence intervals. Quantitative variables were summarized by using the mean and standard deviation with intervals confidence at 95%. The quality assesment encompassed study methods, participants, experimental intervention, and control treatment. Overall, the risk of bias was categorized as low, unclear, or high risk based on random sequence generation, allocation concealment, blinding, incomplete outcome data, and selective reporting.
Results: The literature research yielded 91 citations, but only publications using eligible PRGF met the inclusion criteria, consisting of 3 RCTs, 1 prospective and 1 retrospective analysis ($n = 5$). Two studies were rated as having a low risk of bias, and the remaining three studies as having high risk of bias. In two randomized clinical trials, it was observed that after six months of treatment the number of patients with a pain reduction of more than 50% was significantly higher in the group treated with PRGF than in the control group (HA). In two other studies (one retrospective and one prospective) the patients treated with PRGF showed a significant pain reduction compared with the patients treated with HA (WOMAC and VAS scale respectively). The remaining variables (WOMAC scale for pain, function, and stiffness, LEQUESNE, KOOS, scale and OMERAT OARSI responders) showed a statistically significant superiority of the group treated with PRGF in two RCT (Vaquerizo et al 2013, and Say et al 2013).
Conclusions: The current clinical evidence suggests that pain reduction of PRGF intra-articular infiltrations in patients with knee OA is significantly higher compared with HA, and lasting for a longer period of time (24 weeks after the last infiltration). Despite the high risk of bias of the other three studies, their results are consistent with those coming from the two RCT. There exist three key limitations in this review: the heterogeneity of the studies that met the inclusion criteria, the small number of publications included in the study, and the absence of a placebo in the control group.

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LOW COST MINIMALIST SHOE AS A MECHANICAL TREATMENT FOR ALGO-FUNCTIONAL ASPECTS AND ANALGESIC MEDICINE INTAKE IN ELDERLY WOMEN WITH KNEE OSTEOARTHRITIS

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Purpose: To evaluate the therapeutic effect of a low cost, flexible non-heeled shoe on the WOMAC domains and paracetamol intake of elderly women with knee OA.
Methods: A randomized, parallel and controlled clinical trial, with blind assessor was carried out. Fifty-six elderly women with knee OA graded 2 or 3 (Kellgren and Lawrence), assessed at baseline (T0), after three (T3) and after six months (T6), were randomly allocated into the intervention group (IG, $n = 28$) or the control group (CG, $n = 28$). We adopted the WOMAC pain as a primary outcome, and stiffness, function, and total WOMAC score, and paracetamol intake as the secondary outcomes. As intervention, the patients wore a minimalist, flexible and low-cost shoe (Moleca® shoe; Calçados Beira Rio S.A., Novo Hamburgo, RS, Brazil) for average daily usage time of 7 h 40 min. This intervention shoe is a women's double canvas flexible flat walking footwear without heels, and with a 5-mm anti-slip rubber sole. Paracetamol (500 milligrams), as a rescue medication, was allowed for both groups only in case of pain. The time effects (baseline, 3 and 6 months) of group (IG and CG) and interaction (time and group) were tested by two-way casewise ANOVA.
Results: The IG showed an improvement in pain (effect size between-group of 1.41), function (effect size of 1.22), and stiffness (effect size of 0.76) in WOMAC. The within-group results show that the IG improved the WOMAC pain by 51% ($p = 0.001$) at T3 and 66% ($p = 0.001$) at T6. The CG improved the WOMAC pain by 34% ($p = 0.001$) at T3 and 28% ($p = 0.001$) at T6. The IG improved the WOMAC stiffness by 55% ($p = 0.001$) versus the CG that worsened 22% ($p = 0.001$) at T3; at T6, the IG presented a reduction of 62% ($p = 0.001$) for WOMAC stiffness while, in the CG, the reduction was only by 15% ($p = 0.001$). The IG increased the WOMAC function by 52% ($p = 0.001$) at T3 and 62% ($p = 0.001$) at T6. In the CG, this variable was improved by 29% ($p = 0.001$) at T3 and 19% ($p = 0.001$) at T6. In the IG, WOMAC total score was improved by 53% ($p = 0.001$) at T3 and 62.4% ($p = 0.019$) at T6. In CG the improvement was of 26% ($p = 0.001$) at T3 and 19% ($p = 0.001$) at T6. The CG increased significantly the intake of rescue medication throughout the study, which possibly influenced their pain reduction and function improvement. The IG showed a slight increase in the paracetamol intake at the end of the 1st, 2nd and 3rd month; nevertheless, in the 4th, 5th and 6th month, the paracetamol intake was again similar to the initial assessment. From the 2nd to 6th month paracetamol intake was significantly higher in CG compared to IG.
Conclusion: We can recommend the use of this low cost minimalist shoe as another conservative mechanical treatment that aims to minimize pain, improve functional aspects, and reduce the rescue medication intake.

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BMI, OBESITY AND EDUCATION

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Purpose: To evaluate the effects of an educational program of patients with knee osteoarthritis (KOA) by means of BMI change.

Methods: Two hundred and five patients with knee OA were evenly allocated in four groups. Three groups had two days of lectures on OA. All groups received printed material to read and a video with all the lectures. Groups 1, 2, and 3, had lectures one, two and three months apart respectively. Group 4 received the educational material only. Half of the patients (subgroups A) received four telephone calls (three months apart) after the final lecture or after receiving the educational material (Group 4). Weight, height, were measured at baseline and at one year after the educational program. BMI was calculated. Participants were encouraged to maintain a balanced diet and to exercise at least three times a week.
Results: All groups were similar in age, BMI was significantly different in the group that did not attend classes (Group 4). Table 1 shows changes in BMI. All groups that attended classes (Groups 1 to 3) diminished BMI. Group 3 (higher baseline BMI) decreased BMI the most. Group 4 (educational material only) increased BMI changing from obesity grades I and II, at baseline, to obesity grades II and III (morbid obesity) in one year. Among those who lost weight, the higher initial BMI, the greater initial weight loss ($p = 0.03$). Differences were significant between groups:
(1–3) mean = −1.64, 95% CI (−6.50, −0.77), $p = 0.006$,
(1–4) mean = −3.55, 95% CI (−6.27, −0.83), $p = 0$.
(2–4) mean = −4.60, 95% CI (−7.35, −1.849), $p = 0$,
(3–4) mean = −7.19, 95% CI (−9.94, −4.44), $p = 0.00$;
Telephone calls did not interfere with the results.
Conclusions: The educational program with its clarification about the importance of healthy eating and exercise improved anthropometric parameters of this population, which adhered to the guidelines.

Table 1
BMI of groups 1 to 4 at baseline and at year

GROUP	BASELINE BMI MEAN	CI (95%)	1 YEAR BMI MEAN	CI (95%)	WIEGTH LOSS (P = 0.03)
1A	30.4	28.2–32.5	29.1	27.39–30.84	−1.3
1B	29.8	27.8–31.72	28.7	25.6–31.70	−1.1
2A	33.3	30.8–35.8	31.8	30.62–35.40	−1.5
2B	32.3	30–34.7	30.8	28.38–33.13	−1.5
3A	29.8	28–31.6	28.7	27.8–32.23	−1.1
3B	37.4	35.7–39.1	35.6	32.2–37.1	−1.8
4A	35.9	33.3–38.53	36.6	35.6–40.70	0.7
4B	37.1	35.2- 38.93	37.6	35.98–39.31	0.5

A = RECEIVED TELEPHONE CALLS
B = NO TELPHONE CALLS

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PARQVE – PROJECT ARTHRITIS RECOVERING QUALITY OF LIFE BY MEANS OF EDUCATION. ONE YEAR FOLLOW-UP. EFFECTS ON PAIN, FUNCTION, BMI AND QUALITY OF LIFE OF THE EDUCATIONAL PROGRAM, COPING SKILLS AND LEVEL OF EDUCATION

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Purpose: To evaluate the effects (changes in BMI, pain, function and quality of life) of an educational program administered to patients with knee osteoarthritis (KOA).
Methods: Two hundred and two patients with knee OA were evenly allocated in four groups. Three groups had two days of lectures on OA. All groups received printed material to read and a video with all the lectures. Groups 1, 2, and 3, had lectures one, two and three months apart respectively. Group 4 received the educational material only. Half of the patients (subgroups A) received four telephone calls (three months apart) after the final lecture or after receiving the educational material (Group 4). VAS, WOMAC, Lequesne and SF-36 questionnaires were applied at baseline, 4 and 12 months after lectures and educational material retrieval. Weight and height were measured at baseline and at one year after the educational program. BMI was calculated. Schooling years was registered and a coping scale adapted to the Brazilian population was applied. Participants were encouraged to maintain a balanced diet and to exercise at least three times a week.
Results: All groups were similar in gender, race, afected side and Kelgreen & Lawrence grades. Age wise groups 2 and 3 differed statistically (61.4 and 66.7, respectively). BMI was significantly higher in the group that did not attend classes (Group 4) with an average BMI of 36.4, while groups 1 to 3 showed BMI of 34.3, 32.8 and 30.1, respectively. All groups that attended classes (Groups 1 to 3) diminished BMI. Group 4 (educational material only) increased BMI. BMI reduction did not correlate with pain and functional results although among those that reduced BMI, there were a greater number of patients with improved function (WOMAC) than among those that did not reduce BMI. Patient's schooling did not correlate with pain and functional results. At 4 months functional (WOMAC), pain (WOMAC pain) and quality of life (SF-36) improvements were better than at one year being statistically significant (WOMAC, $p = 0.006$; WOMAC pain, $p = 0.034$, SF-36 MCS, $p = 0{,}009$ and SF-36 PCS, $p = 0.044$) whereas at one year they were not (Table). VAS and Lequesne scores improved but were not statistically significant. A positive correlation was found between coping skills focused on the problem and improvement in the Lequesne functional score at one year ($p = 0.05$).
Conclusions: The educational program changed habits of patients improving pain, function, BMI and quality of life. Short-term pain and functional results were better than at one year. Functional results correlate with patient's coping skills that must be evaluated and addressed in the educational program.

WOMAC, WOMACpain, SF-36 (MCS and PCS) of groups 1 to 4 at baseline, 4 and 12 months pos-intervention

Group	WOMAC-baseline Mean (SD) 95% CI	WOMAC- 4 MONTHS Mean (SD) 95% CI	WOMAC- 1 YEAR Mean (SD) 95% CI	WOMAC PAIN-baseline Mean (SD) 95% CI	WOMAC PAIN- 4 MONTHS Mean (SD) 95% CI	WOMAC PAIN- 1 YEAR Mean (SD) 95% CI	SF36 MCS – BASELINE Mean (SD) 95% CI	SF36 MCS – 4 MONTHS Mean (SD) 95% CI	SF36 MCS – 1 YEAR Mean (SD) 95% CI	SF36 PCS – BASELINE Mean (SD) 95% CI	SF36 PCS – 4 MONTHS Mean (SD) 95% CI	SF36 PCS – 1 YEAR Mean (SD) 95% CI
1A	48.8 (15.8) (43–54.7)	44.6 (13.5) (39.6–49.6)	44.3 (14) (39.1–49.5)	9.1 (4.3) (7.5–10.7)	8 (3.9) (6.6–9.5)	8.3 (3.6) (7–9.7)	46.6 (14.1) (41.4–51.8)	33.9 (7.5) (31.1–36.7)	34.2 (7.3) (31.5–36.9)	46.6 (14.1) (41.4–51.8)	46.9 (11.8) (42.5–51.3)	49.5 (10) (45.8–53.2)
1B	44.3 (19.8) (36.1–52.6)	37.6 (17.2) (30.4–44.7)	40.2 (15.6) (33.7–46.7)	8.9 (4.2) (7.1–10.7)	7.8 (3.5) (6.3–9.2)	7.7 (3.4) (6.3–9.1)	43.8 (12.3) (38.7–49)	35.7 (6.9) (32.8–38.6)	31.7 (9.1) (27.9–35.5)	43.8 (12.3) (38.7–49)	47.2 (12.5) (42–52.4)	47.7 (13.1) (42.3–53.2)
2A	47.2 (19.3) (39.6–54.8)	41.5 (18.3) (34.3–48.6)	44.8 (20.4) (36.8–52.8)	9.9 (4.4) (8.2–11.6)	8.6 (4.2) (7–10.3)	8.5 (4.2) (6.9–10.2)	43.5 (13.1) (38.4–48.7)	34.6 (8.4) (31.3–37.8)	33.9 (9.6) (30.2–37.7)	43.5 (13.1) (38.4–48.7)	47.3 (10.4) (43.2–51.4)	47 (13.7) (41.6–52.4)
2B	48.4 (17.1) (41.8–55)	43.1 (20.6) (35.1–51)	40.4 (20.8) (32.4–48.4)	9.7 (3.2) (8.4–10.9)	8.9 (4.3) (7.2–10.5)	7.4 (4.1) (5.8–8.9)	44.8 (13) (39.9–49.8)	33.7 (9.5) (30–37.3)	32.9 (9.1) (29.3–36.4)	44.8 (13) (39.9–49.8)	46.2 (12.3) (41.5–50.9)	46.4 (14.2) (40.9–51.9)
3A	44.2 (18.7) (37–51.4)	38.2 (13) (33.2–43.2)	43 (14.4) (37.5–48.5)	8.5 (4.3) (6.9–10.1)	7.9 (3.1) (6.7–9.1)	8.9 (3.3) (7.6–10.1)	46.5 (9.8) (42.7–50.3)	37.9 (8.6) (34.6–41.2)	35.8 (10.3) (31.9–39.7)	46.5 (9.8) (42.7–50.3)	47 (8.4) (43.8–50.3)	49.3 (10) (45.4–53.1)
3B	43 (19.1) (35.5–50.5)	45 (19.6) (37.3–52.6)	44.9 (20.5) (36.8–52.9)	9 (3.9) (7.5–10.5)	8.7 (3.8) (7.2–10.2)	8.8 (4) (7.2–10.4)	48.3 (11.4) (43.8–52.8)	33.5 (9.1) (30–37.1)	32.6 (8.1) (29.4–35.8)	48.3 (11.4) (43.8–52.8)	50.4 (11.8) (45.8–55.1)	48.2 (11.4) (43.7–52.7)
4A	42.6 (20.8) (34.8–50.5)	41.3 (17.5) (34.7–47.9)	44.8 (19.4) (37.5–52.1)	8.3 (4) (6.8–9.8)	8.6 (3.2) (7.4–9.7)	9.2 (3.5) (7.9–10.5)	42.2 (13.2) (37.3–47.2)	33.3 (8.6) (30.1–36.5)	34.1 (8.3) (30.9–37.2)	42.2 (13.2) (37.3–47.2)	44.7 (10.5) (40.7–48.7)	43 (13.2) (38–47.9)
4B	44.4 (13.8) (38.8–50.1)	45.4 (18.9) (37.7–53.1)	47.5 (19) (39.7–55.3)	9.4 (4.1) (7.7–11.1)	8.9 (3.5) (7.5–10.3)	9.6 (4.7) (7.7–11.5)	45.4 (12.1) (40.5–50.4)	32.4 (8.5) (28.9–35.9)	32.7 (8.1) (29.4–36)	45.4 (12.1) (40.5–50.4)	47.9 (9.6) (44–51.9)	48.6 (17) (41.7–55.6)

A = TELEPHONE CALLS
B = NO TELEPHONE CALLS