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TO COMPARE THE EFFICACY OF GENICULAR NERVE BLOCK AND INJECTION OF HYLAN G-F 20 VERSUS GENICULAR NERVE BLOCK ONLY FOR IMPROVING PAIN AND FUNCTION OF GRADE-II AND GRADE-III OSTEOARTHRITIS KNEE

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ABSTRACT

Introduction: Osteoarthritis (OA) of knee joint is a degenerative joint disease; heterogeneous and progressive in nature. Clinically presented with stiffness, swelling and pain which leads to a decrease in the quality of life. The presence of chronic knee pain has been found to be a strong predictor of future disability and dependency in older adults. Usually managed conservatively but if conservative treatment fails, Total Knee Replacement (TKR) is traditionally considered. This is associated with multiple perioperative morbidities. On the contrary, many patients are not suitable for surgical procedure and some do not want to go for surgical intervention. As many patients are not surgical candidates due to co-morbidities or unwillingness; other treatment options available are being sought for. The genicular nerve block (GNB) reduces pain and improves patient functions by blocking pain transmission of the sensory nerves. Combining this genicular nerve block with viscosupplementation (Injection Hylan G-F 20) appears to play a role and can be tried in patients suffering in grade II and grade III (radiological grading) osteo arthritis. There is paucity of information so as to compare the efficacy of genicular nerve block and injection of Hylan G-F 20 versus genicular nerve block only.

Material And Methods: This Parallel group open label randomized controlled trial was done between July, 2018 to December, 2019 (Eighteen months). Patients with knee pain in grade II and III, OA knee attending the PMR OPD in IPGME&R, Kolkata in the specified tenure was considered for the study. The selected patients were allotted by random table. All the procedures were performed by single person. A total number of 60 patients with knee osteoarthritis of grade II and III, who did not respond with conservative management were included. Combined therapy of intra-articular injection of Hylan G-F 20 and genicular nerve block in Group 1 (Genicular Nerve Block and Injection Hylan G-F 20) and Genicular Nerve Block only in Group 2, performed to 30 patients in each arm. The three branches of the genicular nerve [superior lateral (SL), superior medial (SM), and inferior medial (IM) genicular nerves] were selected. Patients were evaluated initially (0 week) and at the 4th and 12th week followed up after intervention using VAS and WOMAC scale. Ultrasound guided genicular nerve block conducted under strict asepsis after proper dressing and draping with the visualization of genicular nerves (upper medial, upper lateral and lower medial quadrant) by musculoskeletal probe of Ultrasound machine (SAMSUNG/ Model PT60A/Musculoskeletal probe 12MHz). Injection Hylan G-F 20 (6 ml) intra-articular injection was given under strict asepsis.

Results: 47% patients in group 1 and 67% patients in group 2 were in between 60-69 years. There is female preponderance in both the groups. WOMAC-pain score for dual intervention at 4th week was statistically significantly lower compared to WOMAC-pain score obtained at any time of observation and any type of intervention. WOMAC- stiffness score for dual intervention at 4th week was statistically significantly lower compared to WOMAC- stiffness score obtained at any time of observation. WOMAC SCORE: The changes in each intervention group at 0-week, 4th week and 12th week were statistically significant. Statistically significant difference of two groups were lost during 4th and 12th weeks observation. VAS: During 4th and 12th weeks observation, statistically significantly different VAS score was observed among the two interventions; Genicular nerve block with injection consistently had a lower VAS score. This finding imply that Genicular nerve block alone did reduce the pain; however, reduction was greater in case of Genicular nerve block with Injection Hylan G-F 20 in both 4th and 12th week of observation.

Conclusion: Genicular Nerve Block with injection HYLAN GF 20 (Combined Therapy Group) and Genicular Nerve Block alone are effective method of pain reduction in osteoarthritis knee. Combined Therapy doesn't have an added advantage as per WOMAC Score. But Combined therapy has a definite advantage over Genicular Nerve Block alone as per VAS Score.

KEYWORDS

Genicular Nerve Block (GNB), Hylan G-F 20, Osteoarthritis Knee

INTRODUCTION:

Osteoarthritis of knee joint is a degenerative joint disease. It involves articular cartilage, and periarticular structures i.e., subchondral bone, synovial tissue and joint capsule. There is loss of cartilage- which is heterogeneous and progressive in nature. Clinically presented with stiffness, swelling and pain.[1] Osteoarthritis ranks as the 11th leading cause of years lived with disability & 3rd greatest contributor to loss of health-related quality of life.[2] A recent global analysis approximating that 85% of osteoarthritis cases being located in the knee.[3] The burden of osteoarthritis leads to a decrease in the quality of life. The presence of chronic knee pain has been found to be a strong predictor of future disability and dependency in older adults.[4]

Usually managed conservatively but if conservative treatment fails, Total Knee Replacement (TKR) is traditionally considered. This is associated with multiple perioperative morbidities. On the contrary, many patients are not suitable for surgical procedure and some do not want to go for surgical intervention. As many patients are not surgical candidates due to co-morbidities or unwillingness. So, other treat options available are being sought for. The genicular nerve block (**GNB**) reduces pain and improves patient functions by blocking pain transmission of the sensory nerves.[5] Combining this genicular nerve block with visco supplementation (**Injection Hylan G-F 20**) appears to play a role and can be tried in patients suffering in grade II and grade III osteoarthritis (as per radiological grading).[6,7,8]

There is paucity of information so as to compare the efficacy of genicular nerve block and injection of Hylan G-F 20 versus genicular nerve block only. So, this is our humble approach on this topic.

AIMS AND OBJECTIVE:

1. To compare the efficacy on pain and functional recovery in the short and medium term of the application of the genicular nerve block of osteoarthritis patients with chronic knee pain
2. To compare combined therapy genicular nerve block and injection of viscosupplementation (Hylan G-F20) with GNB alone.

REVIEW OF LITERATURE:

Osteoarthritis Knee (OA Knee) affects one third of the population over 65 years of age, and it is an important cause of pain and disability. The gold standard surgical treatment is total knee arthroplasty; however, 15% to 30% of patients who have undergone surgery continue to experience pain and functional limitation. GNB administered together with corticosteroid, is as effective as RF genicular ablation.[9] As per Doo-Hwan Kim et al. Genicular nerve block by local anaesthetic

versus local anaesthetic and corticosteroid; VAS scores were significantly lower in the lidocaine plus steroid group than in the lidocaine alone group at both 2 weeks after genicular nerve block.[10] Mireia Espallargues, Joan M V Pons did a systemic review on efficacy and safety of viscosupplementation with Hylan G-F 20 for the treatment of knee osteoarthritis where they suggested that Viscosupplementation with Hylan G-F 20 for the treatment of osteoarthritis; Hylan G-F 20 provided good clinical benefits and an acceptable safety profile. The occurrence of adverse events after an intraarticular Hylan G-F 20 injection is infrequent.[6] A Canadian multicenter trial comparing Hylan G-F 20 alone, Hylan G-F 20 with non-steroidal anti-inflammatory drugs (NSAIDs) and NSAIDs alone showing that viscosupplementation with Hylan G-F 20 was at least as good or better than continuous NSAID therapy for all outcome measurements except activity restriction.[7]

The three branches of the genicular nerve [superior lateral (SL), superior medial (SM), and inferior medial (IM) genicular nerves] were selected because they pass the periosteal areas connecting the shaft of the femur to the bilateral epicondyles and the shaft of the tibia to the medial epicondyle. It has been shown that genicular articular branches innervate the knee joint.[11]

The three genicular nerves mentioned: superolateral genicular branch from the common peroneal nerve, the SM, and IM genicular branches from the tibial nerve. The technique for targeting these nerves was popularized by Choi et al. who found significant improvement in pain at three months in the neurotomy patients versus control patients who received a sham procedure with a block.[12] The result of this complex innervation of the knee has been the development of multiple approaches being described in different studies. In a review of current literature conducted by Jamison and Cohen, they reviewed nine clinical trials which not only demonstrated significant benefits in reduction of pain and improvement in function but also mentioned the wide range of procedural targets. These targets included the SM, IM, and SL genicular nerves in combination.[13]

In the ultrasound-guided genicular nerve block technique, three nerves were selected for the same reasons. Visualization of the genicular nerves is difficult, but genicular arteries can be used to help more easily identify the location of the genicular nerve, as the arteries, which are well visualized, travel alongside the genicular nerves (Figure 1).[14] Genicular arteries can easily be revealed on ultrasound (US), resulting in increased success of nerve targeting (Figure 2).[15]

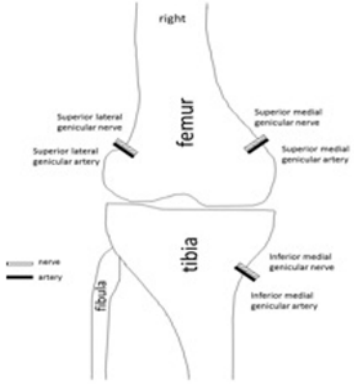

Figure 1: Contiguity of the genicular arteries and nerves.

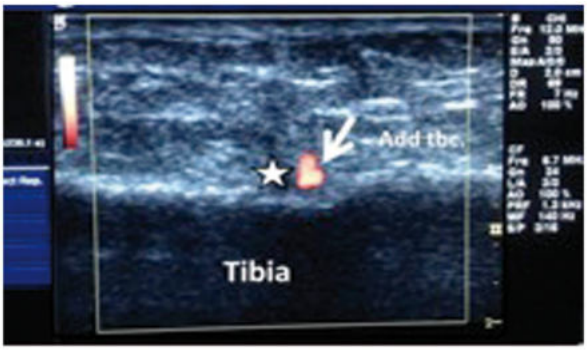

Figure 2: US image of inferior medial genicular artery and nerve. Star, inferior medial genicular nerve; arrow, inferior medial genicular artery. Add tbc = adductor tubercle.

Many studies have been done regarding efficacy of NSAID, intra-articular corticosteroid injection, viscosupplementation and genicular nerve block in treatment of osteoarthritis of knee. No major study comprising combined therapy of genicular nerve block with injection Hylan G-F 20 has been done to evaluate its efficacy. In our study we have studied efficacy of combination of GNB with Hylan G-F 20 injection and GNB only.

MATERIALS AND METHOD:

Institutional Ethical Committee clearance was taken. Individual informed consent (both written and verbal) was taken from the patients.

Place Of Study: The study was conducted at Department of Physical Medicine and Rehabilitation (PMR), IPGME&R SSKM Hospital, Kolkata.

Study Period: Between July, 2018 to December, 2019 (Eighteen months).

Study Population: Patients with knee pain in grade II and III OA knee attending the PMR OPD in IPGME&R, Kolkata in the specified tenure were considered for the study. The selected patients were allotted by random table. All the procedures were performed by single person.

Study Design: Parallel group open label randomized controlled trial.

Inclusion Criteria:

1. Patient with grade II & III Osteoarthritis knee attending the PMR OPD in IPGME&R, Kolkata.
2. Patient not responding well with NSAID and Modalities.
3. VAS>7

Exclusion Criteria:

1. Allergic to corticosteroid (depo-methyl prednisolone).
2. Allergic to local anaesthetic (lignocaine, bupivacaine).
3. H/o intra-articular knee injection of corticosteroid 3 months prior or less.
4. Uncontrolled diabetes mellitus.
5. Uncontrolled hypertension
6. Bleeding diathesis
7. Skin infections adjacent to knee joint
8. Fever of any duration

A total number of 60 patients with knee osteoarthritis of grade II and III, who did not respond with conservative management were included. combined therapy of intra-articular injection of Hylan G-F 20 and genicular nerve block in **Group** 1 (Genicular Nerve Block and Injection Hylan G-F 20) and in **Group 2** (Genicular Nerve Block Only) performed to 30 patients in each arm. They were evaluated initially (0 week) and at the 4th and 12th week followed up using VAS and WOMAC scale.

PROCEDURE:

Ultrasound Guided Genicular Nerve Block: Conducted under strict asepsis after proper dressing and draping with the visualization of genicular nerves (upper medial, upper lateral and lower medial quadrant) by musculoskeletal probe of Ultrasound machine (*SAMSUNG/ Model PT60A/Musculoskeletal probe 12MHz).*

Injection Hylan G-F 20 (6 ml) intra-articular injection given under strict asepsis.

TOOLS:

1. Portable USG machine with musculoskeletal probe (SAMSUNG/ Model PT60A/Musculoskeletal probe 12MHz)
2. Sterile plastic cover for probe
3. Povidone iodine lotion
4. Rectified spirit
5. Gauge pieces
6. 10ml syringe with 22G needle
7. Injection lignocaine 2%
8. Injection Bupivacaine 0.5%
9. Injection Methyl prednisolone
10. Leucoplast
11. Crepe bandage (6 inches)

12. Injection Hylan G-F 20

Post Intervention Advices:
Patients of each group were advised to avoid water contact for 24 hours, heavy exercises for 48 hours and Tablet Acetaminophen 1gm on SOS basis. Continuation of orthotic support was advised as well (if using any prior to injection).

Statistical Analysis:

Table 1: Intervention Wise Distribution Of Participants According To Their Characteristics (n=60)

Variable	Genicular Nerve Block with Injection Hylan G-F 20	Genicular Nerve Block Only
	Frequency (Percentage)	Frequency (Percentage)
Age		
Less than 39 years	0 (0)	1 (3)
40-49 years	0 (0)	0 (0)
50-59 years	4 (13)	3 (10)
60-69 years	14 (47)	20 (67)
>=70 years	12 (40)	6 (20)
Gender		
Male	12 (40)	14 (47)
Female	18 (60)	16 (53)
Male: Female ratio	1:1.5	1:1.14

GENDER DISTRIBUTION:

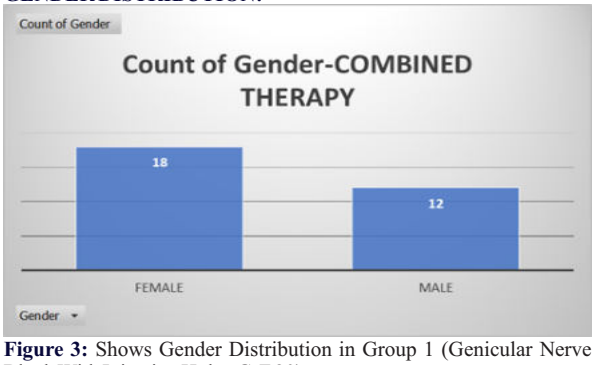

Figure 3: Shows Gender Distribution in Group 1 (Genicular Nerve Block With Injection Hylan G-F 20)

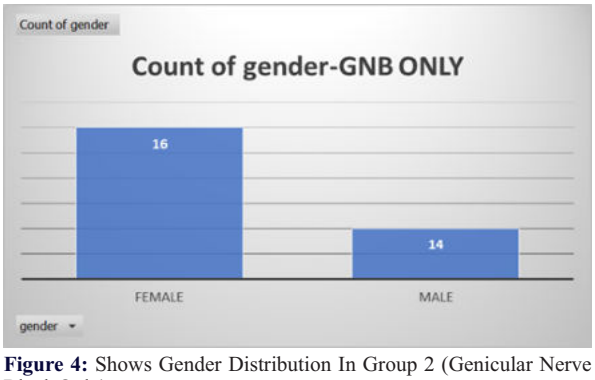

Figure 4: Shows Gender Distribution In Group 2 (Genicular Nerve Block Only)

AGE DISTRIBUTION:

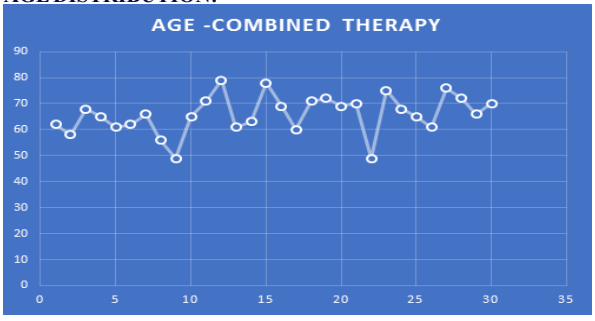

Figure 5: Shows Age Distribution In Group 1 (Genicular Nerve Block with Injection Hylan G-F 20)

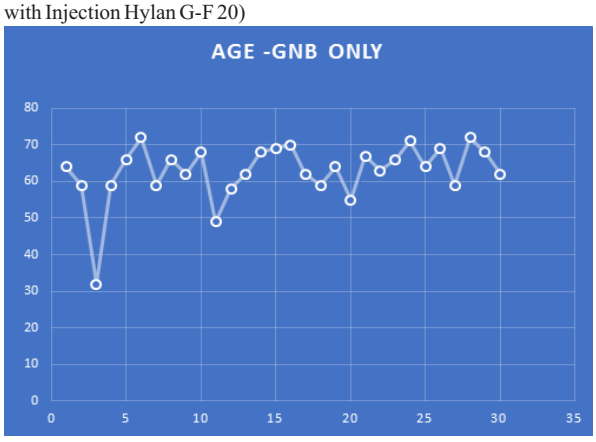

Figure 6: Shows Age Distribution in Group 2 (Genicular Nerve Block Only)

DISTRIBUTION OF WOMAC SCORE:

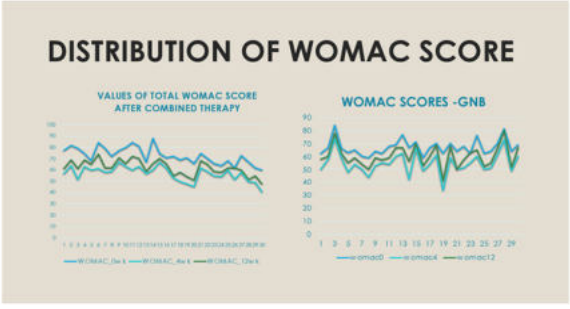

Figure 7: shows Values of Total WOMAC Score after Combined Therapy in Group 1 **(Genicular Nerve Block and Injection Hylan G-F 20) in left side** and Values of Total WOMAC Score after GNB **in Group 2 (Genicular Nerve Block Only) in right side**

Table 2: Intervention Wise Distribution Of Patients As Per Their WOMAC score

Variable	Genicular nerve block with Injection Hylan G-F 20 Mean (SD)	Genicular nerve block only Mean (SD)	Remarks
WOMAC score in the beginning	72.80 (7.25)	67.07 (6.10)	Repeated Measure ANOVA (RM-ANOVA) revealed that a difference existed according to total WOMAC score (p-value = 0.000).
WOMAC score at 4 weeks	56.97 (6.41)	54.87 (8.37)	
WOMAC score at 12 weeks	62.33 (6.66)	60.27 (8.45)	

Table 3: Intervention Wise Distribution Of Patients As Per Their WOMAC Pain Score

WOMAC – pain component	Genicular nerve block with Injection Hylan G-F 20 Mean (SD)	Genicular nerve block only Mean (SD)	Remarks
In the beginning	16.7	16.4	**Repeated Measure ANOVA (RM-ANOVA) revealed that a difference existed according to total WOMAC - pain score (p-value = 0.000).**
At 4 weeks	11.2	11.7	
At 12 weeks	12.7	13.6	

Table 4: Intervention Wise Distribution Of Patients As Per Their

WOMAC Stiffness Score

WOMAC – stiffness component	Genicular nerve block with Injection Hylan G-F 20 Mean (SD)	Genicular nerve block only Mean (SD)	Remarks
In the beginning	6.63	6.43	Repeated Measure ANOVA (RM-ANOVA) revealed that a difference existed according to WOMACs score (p-value = 0.000).
At 4 weeks	4.80	5.07	
At 12 weeks	5.47	5.77	

Table 5: Intervention Wise Distribution Of Patients As Per Their WOMAC Function Score

WOMAC – functionality component	Genicular nerve block with Injection Hylan G-F 20 Mean (SD)	Genicular nerve block only Mean (SD)	Remarks
In the beginning	49.7	44.5	Repeated Measure ANOVA (RM-ANOVA) revealed that a difference existed according to total WOMAC score (p-value = 0.000).
At 4 weeks	38.0	41.1	
At 12 weeks	40.5	44.3	

- WOMAC-pain score for dual intervention at 4th week was statistically significantly lower compared to WOMAC-pain score obtained at any time of observation and any type of intervention
- WOMAC- stiffness score for dual intervention at 4th week was statistically significantly lower compared to WOMAC- stiffness score obtained at any time of observation

Table 6: Intervention Wise Distribution Of Patients As Per Their VAS Score

Variable	Genicular nerve block with Injection Hylan G-F 20 Mean (SD)	Genicular nerve block only Mean (SD)	p-value
VAS score in the beginning	8.43 (0.77)	8.67 (0.76)	Repeated Measure ANOVA (RM-ANOVA) revealed that a difference existed according to VAS score (p-value = 0.000).
VAS score at 4 weeks	4.77 (0.86)	5.70 (1.26)	
VAS score at 12 weeks	5.9 (1.16)	7.2 (1.40)	

DISTRIBUTION OF VAS:

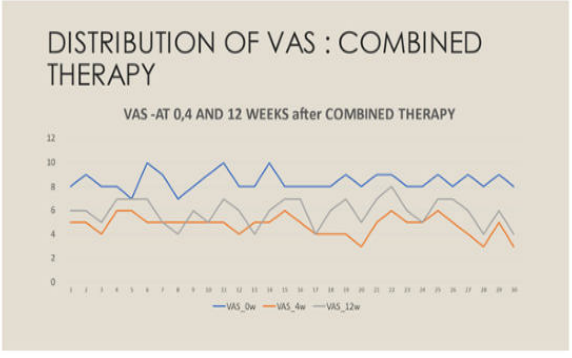

Figure 8: shows distribution of **VAS Score** in Combined Therapy in **Group 1 (Genicular nerve block and Injection Hylan GF 20)**

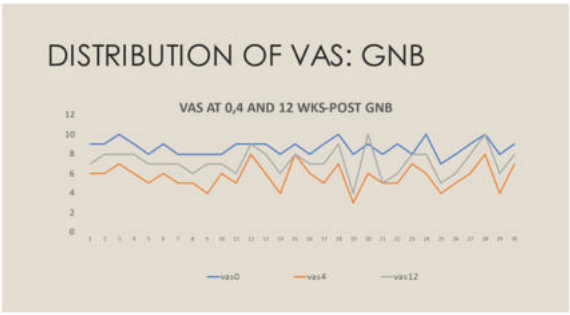

Figure 9: shows distribution of **VAS Score in Group 2 (Genicular Nerve Block)**

WOMAC Score:

- The changes in each intervention group at 0-week, 4th week and 12th week were statistically significant.
- Statistically significant difference of two groups were lost during 4th and 12th weeks observation.

VAS Score:

- During 4th and 12th weeks observation, statistically significant difference in VAS score was observed among the two interventions;
- Genicular nerve block with injection consistently had a lower VAS score.

(*This finding imply that Genicular nerve block alone did reduce the pain; however, reduction was greater in case of Genicular nerve block with Injection Hylan G-F 20 in both 4th and 12th week of observation*)

DISCUSSION:

In this Parallel group open label randomized controlled trial, aiming to compare the efficacy on pain and functional recovery in the short and medium term of the application of the genicular nerve block of osteoarthritis knee patients (Grade II and III) with chronic knee pain and to compare combined therapy with genicular nerve block and injection of viscosupplementation (HYLAN G-F 20) versus GNB alone; a total number of 60 patients with knee osteoarthritis who did not responded with conservative management were included. In combined therapy group i.e., **Group 1, Genicular Nerve Block (GNB) along with intra-articular injection of Hylan G-F 20** was given and **in Group 2, only Genicular Nerve Block (GNB) performed.** There were 30 patients in each arm. They were evaluated initially (0 week) and at the 4th and 12th week followed up using VAS and WOMAC scale.

Patients of Primary OA knee, Radiologic K/L (Kellgren-Lawrence Grading Scale) score: grade II & III, Age: 30 - 80 years, poorly responding to initial treatments and unwilling or contraindicated for surgical management with VAS>7 for pain were included.

Maximum patients are in between 60-69 years. 47% in group 1 and 67% in group 2. There is female preponderance in both the group, 60% and 53% in group 1 and group 2 respectively. In group 1, male:12, female: 18 and in group 2 male:14, female: 16. Male: Female 1:1.5 and 1:1.14 in group 1 and group 2 respectively.

WOMAC-pain score for dual intervention at 4th week was statistically significantly lower compared to WOMAC-pain score obtained at any time of observation and any type of intervention.

WOMAC- stiffness score for dual intervention at 4th week was statistically significantly lower compared to WOMAC- stiffness score obtained at any time of observation.

WOMAC SCORE: The changes in each intervention group at 0-week, 4th week and 12th week were statistically significant. Statistically significant difference of two groups were lost during 4th and 12th weeks observation.

VAS: During 4th and 12th weeks observation, statistically significantly different VAS score was observed among the two interventions; Genicular nerve block with injection consistently had a lower VAS score.

This finding imply that Genicular nerve block alone did reduce the pain; however, reduction was greater in case of Genicular nerve block with Injection Hylan G-F 20 in both 4th and 12th week of observation.

In a Double-Blind, Randomized Clinical Study done by Qudsi-Sinclair S et al. compared neurolysis using traditional radiofrequency (RF) to local anesthetic and corticosteroid block of the superolateral, superomedial, and inferomedial branches of the knee genicular nerves in patients who had total knee arthroplasty but still experience pain. Patients were followed for over a 1-year period. A reduction in pain and significant joint function improvement during the first 3 to 6 months were shown, with similar results using both techniques. No adverse effects were noted. An improvement in both disability and quality of life was observed, as well as a reduction in the need for analgesics in both treatment groups.[9] In another Randomized Control trial published in *Pain Physician,* 2018 to assess the effects of combining corticosteroids and local anesthesia during ultrasound-guided GNB in patients with chronic knee OA; they have showed that Ultrasound-guided GNB, when combined with a local anesthetic and corticosteroid, can provide short-term pain relief.[10] As per Stern R, Jedrzejas MJ; alternatives such as hyaluronic acid injections have been shown to have beneficial effects such as intra-articular lubrication, anti-inflammatory, analgesic, and chondroprotective effects.[16] In a Prospective, multicenter, randomized, crossover clinical trial done by Davis T, Loudermilk E, DePalma M, et al. showed 74.1% of cooled RFA patients reported greater than 50% pain relief at six months versus 16.2% of intra-articular steroid injection patients.[17] Prior to this development, the treatment of pain from late-stage osteoarthritis of the knee was essentially limited to surgery. As a result, in 2003, 402,100 people underwent total knee arthroplasties with a projection of as many as 3.4 million replacements annually by 2030.[18] However, not all patients are candidates for surgery due to age or comorbidities, and after having failed conservative treatment options such as bracing, physical therapy, medical management, and steroid or hyaluronic acid derivative injections, there were no other treatment options. Study done by Sarı S, Aydın ON, Turan Y, et al. found genicular nerve radiofrequency neurotomy to be superior to an intra-articular steroid injection into the knee at one and three months.[19]

In a systemic review done by Mireia Espallargues, Joan M V Pons, to review the scientific evidence on the efficacy, effectiveness, and safety of intra-articular injections of Hylan G-F 20 for the treatment of knee osteoarthritis; it is shown that a single course of intra-articular Hylan G-F 20 provides a statistically significant and clinically relevant short-term decrease of the painful symptomatology of knee osteoarthritis and improves joint function. It also seems to delay the need for knee replacement.[6] In a Canadian multicenter clinical trial, assessed by a blinded assessor, comparing hylan G-F 20 alone, hylan G-F 20 with non-steroidal anti-inflammatory drugs (NSAIDs) and NSAIDs alone done by M E Adams et al. in 102 patients with osteoarthritis (OA) of the knee where all patients were on continuous NSAID therapy for at least 30 days prior to entering the study. Patients were randomized into three parallel groups: (1) NSAID continuation plus three control arthrocentesis at weekly intervals; (2) NSAID discontinuation but with three weekly intra-articular injections of Hylan G-F 20; and (3) NSAID continuation plus three injections, one every week, intra-articular injections of Hylan G-F 20. Outcome measures of pain and joint function were evaluated by both the patients and an evaluator at baseline and weeks 1, 2, 3, 7 and 12, with a follow-up telephone evaluation at 26 weeks. At 12 weeks all groups showed statistically significant improvements from baseline, but did not differ from each other. A statistical test for the equivalence, the q-statistic, demonstrated that viscosupplementation with Hylan G-F 20 was at least as good or better than continuous NSAID therapy for all outcome measurements except activity restriction. At 26 weeks both groups receiving Hylan G-F 20 were significantly better than the group receiving NSAIDs alone.[7] In another multicenter, double-masked clinical study in patients with osteoarthritis (OA) of the knee of 1 to 30 years duration, done by M Wobig et al. to see the efficacy and safety in the osteoarthritic knee; three intra-articular injections of 2 mL Hylan G-F 20 were administered 1 week apart to 57 knees. The control group (60 knees) received 2 mL of physiologic buffered saline solution at the same intervals. The differences between Hylan G-F 20 and saline treatment were statistically significant for all outcome measures. No adverse events were observed in the injected joint after Hylan G-F 20 treatment. These results demonstrate that Hylan G-F 20 is effective and well tolerated in the management of chronic idiopathic OA.[20] Study done by Simon Lee, showed that Hylan G-F 20 effectively and safely relieves osteoarthritis knee pain, facilitates an improved activity level, and decreases the need for pain medication, physiotherapy, and assistive devices.[21]

In a study published in *Pain Medicine*, where the needle arrived in the targeted area, a 6-ml combination of 1ml long-acting betamethasone (3.947 mg betamethasone sodium phosphate + 3 mg betamethasone acetate), 2 ml lidocaine hydrochloride 2%, and 3ml saline solution was distributed equally to the targeted three injection sites. The injectate was observed to spread around the nerves using direct Ultrasound guidance. The patients were asked to keep a pain diary and record the use of any painkillers or any other conservative treatments during the following 6 months. Outcome measures were assessed according to hospital visits at baseline and at 4 and 24 weeks after the procedure. The prospective analysis of the patient outcomes to GNB included the 0–100 mm visual analog scale (VAS; no pain to unbearable pain) and the Western Ontario and McMaster Universities Arthritis Index (WOMAC Index 3.1; 0–96 points based on 24 questions). Higher scores indicate worse health status. The VAS score improved after the GNB and dropped from 80 mm to 10 mm by week 4, and the patient reported 0 at 24 weeks. The pretreatment WOMAC sub scores were obtained as follows: pain, 20 points; stiffness, 8 points; physical function loss, 68 points; and total WOMAC score, 96 points. In week 4, the total WOMAC score had improved to 5 points, and it decreased to 4 points at the 24-week follow-up visit.[15] Choi et al. [12] and Protzman et al.[22] reported that genicular nerve ablation with radiofrequency (RFA) represented a promising intervention for patients with chronic painful knee OA unresponsive to conservative management.

As per Jadidi S. the global population will be confronted with an increasing burden of osteoarthritis in the coming years, and addressing the disease process early in its course will likely vastly improve outcomes. In order to accomplish this, preventive measures beyond promoting weight loss and exercise should be investigated. In addition, different phenotypes of pain are an emerging topic that is relevant to osteoarthritis and its management. Such targeted treatment can help with adherence and prevention of progression of osteoarthritis.[23]

LIMITATIONS:

1. Small sample size
2. Short time period as the study period was 18 months.
3. Follow up time was short (12 weeks), so we couldn't study the cases for longer time for a better idea of the efficacy.
4. No measures for biomechanical alterations were done.

CONCLUSION:

Genicular Nerve Block with Injection Hylan G-F 20 (Combined Therapy Group) and Genicular Nerve Block alone are effective method of pain reduction in osteoarthritis knee. Combined Therapy doesn't have an added advantage as per WOMAC Score. But Combined therapy has a definite advantage over Genicular Nerve Block alone as per VAS Score. Radiofrequency ablation has emerged as a latest procedure for more effective pain control in genicular nerve block.

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