

## Intronic single nucleotide polymorphism (SNP) of CALM-1 gene is significantly associated with osteoarthritis knee: A case control study

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**Objective:** Though the pathology of osteoarthritis is well defined, the etiological factors are not fully characterized. Genetic exploration of genome has resulted in several susceptibility loci isolation confirming the genetic association of disease. The Japanese population has shown higher incidence of osteoarthritis in patients having intronic and core promoter SNP in CALM-1 gene. At the same, Caucasian and Greek population showed absence of any such predisposition in their population with the CALM-1 gene SNP.

The objective of the study was to determine the association of CALM1 gene polymorphism with knee osteoarthritis.

**Methods:** We planned a case control study in patients of primary osteoarthritis knee with aims being to study the presence of CALM-1 gene SNP, correlation of its presence with osteoarthritis and its correlation with clinico-radiological stage of the disease. 120 cases and 120 controls were enrolled. Clinicoradiological features were noted and symptomatic clinical scoring was done. Genetic polymorphism in relation to intronic region of Calm-1 gene was studied by DNA extraction, PCR and RFLP method. Statistical analysis was done using Stata software.

**Results:** 39 (32.50%) cases and 18 (15%) controls showed the presence of SNP which was significant ( P value = 0.0022). Among SNP positive cases and controls, 5 (8.7%) cases and none controls were heterozygosis for the occurrence of SNP. On regression of affecting variables against SNP, taking the presence of osteoarthritis as dependent variable, we calculated the adjusted odds ratio of all the significant variables. Thereafter, on logistic regression to see the effect of variables on the occurrence of disease, we found age, sex, and presence of SNP affecting the occurrence of disease significantly ( p value < .05).

**Conclusions:** CALM-1 gene intronic SNP (rs3213718) is present in Indian Population. The target SNP is significantly affecting the disease as the difference between cases and controls is highly significant (p value = .0022). Females are more predisposed for OA. Mean age of presentation in cases was 53.31+/-9.5 years. Age is a significant factor in causation of disease. However it is not influenced by existence of SNP. Between cases and controls, height, weight and BMI did not show any significant difference.

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## Treatment of the basal joint osteoarthritis by interposition arthroplasty using fascia latta allograft

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**T**humb basal joint osteoarthritis is very common. We have evaluated the long term outcomes of trapeziectomy and interposition arthroplasty with fascia latta "the pillow technique". From May 1997 until October 2011 73 patients were operated with the referred technique. 12 women with minimum follow-up of 10 years were evaluated (mean age 60,5, range 51-81) underwent interposition arthroplasty with fascia latta (8 unilateral 4 bilateral-one thumb less than ten years). At the final follow-up with an average period of 11,5 years (range: 10-14), all the twelve patients (15 thumbs) were available for assessment. Radiological and clinical assessment (Grip strength, key pinch, pulp to pulp pinch, tripod pinch, and kpanjii score) has been carried out as well as patients questionnaires (DASH and VAS) have been answered. Our study demonstrated excellent results as all except one of the patients returned to their daily activities and VAS was on average 0,92 ( range: 0-5). The clinical scores showed significant improvement of the Grip strength from 13,08 (Left hand) and 11,58 (Right hand) before surgery to 19,87 and 22,03 respectively, of the Key pinch from 4,25/4,3 (L/R) to 6,02/7,39 respectively, of the Tip pinch from 3,63/5,19 (L/R) to 5,57/7,67 respectively and Tripod strength from 3,55/4,34 (L/R) to 4,68/6,84 respectively. No significant loss of the "trapezial gap" was detected in the final radiologic evaluation. The "pillow" technique is simple, safe, fast, easily reproducible and reliable technique in the armamentarium of an orthopaedic hand surgeon for the treatment of basal joint arthritis of the thumb with excellent results.

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