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Impact of lysyl oxidase (G473A) polymorphism on diabetic foot ulcers.

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Lysyl oxidase (LOX) is an extra-cellular matrix-modifying enzyme that has been linked to cell proliferation, metastasis, angiogenesis and wound healing. This study was designed to examine the association of LOX gene polymorphism G473A, G>A, (rs1800449) located in exon 1 of the LOX gene in diabetic subjects with and without diabetic foot ulcers (DFU) and its impact of expression on DFU. Genotypic analysis of 906 samples showed a significant increase in the presence of 'A' allele in type 2 diabetes mellitus (T2DM) and DFU when compared to that of control subjects. Allele wise analysis showed a higher frequency of 'A' allele in the T2DM (36.23%, OR 1.069, P value 0.29) and DFU (41.69%, OR 1.195, P value 0.003) when compared to that of control subjects (33.17%). Interestingly, real time RT-PCR results showed significant increased transcript level of the LOX gene on the AA genotype of DFU when compared to that of the AA genotype of T2DM and control subjects. Our finding predicts that there is an association of LOX gene polymorphism (G473A) on diabetes and DFU patients when compared to that of healthy controls. Thus, this study merits further evaluation on a mechanistic approach of this gene.