In-vitro human buccal fibroblast cell line model for screening antifibrotic activity of plant compounds in Oral Submucous Fibrosis
CONCLUSION

Tissue fibrosis is a condition that lacks a universal effective therapeutic regimen. Therefore, there is a necessity to develop an alternative management. A novel and significant finding in the present study was the identification of ethanolic leaf extracts of *Centella asiatica* L., *Ocimum basilicum* L., *Origanum vulgare* L. subsp *hirtum* and their respective pure compounds; asiatic acid, linalool and thymol that significantly downregulated arecoline-induced inflammatory mediated fibrosis in human buccal fibroblast cell line model. Both the ethanolic leaf extracts and pure compounds significantly attenuated inflammatory markers IL-1β, IL-6, TNFα and upregulated anti-inflammatory marker IL-10 concomitantly downregulating fibrotic markers TGFβ1, COL1A2, and COL3A1. These results presumably could be due to the underlying mechanism of an established appropriate balance between inflammation and inhibition of the TGFβ/ Smad signaling pathway. Based on the results of the present study and the impressive antifibrotic efficacy of plants and their active constituents in attenuating experimental oral fibrosis, it is hoped that the translation of these studies into humans will result in improved therapeutics for patients with Oral submucous fibrosis. Herbal medicine can provide a safer, low cost, and effective alternative to the present conventional treatment.