Conclusion
In conclusion, it can be inferred from the present study that:

1. There was appreciable degree of suppression in GPx activity in both sera as well as in monocyte cultures of osteoporosis patients.
2. Intramonocyte GSH levels also exhibited significant down-regulation in osteoporosis patients.
3. Both, allicin from garlic and EGCG from green tea dose-dependently ameliorated/up-regulated the suppressed GPx activity as well as GSH levels in osteoporosis patients.
4. Reactive oxygen species (ROS) mediated activation of monocyte of osteoporosis patients resulted in the induction of augmented basal levels of TNF-alpha and IL-1β.
5. Both, allicin from garlic and EGCG from green tea efficiently caused down-regulation in TNF-alpha and IL-1b in both sera as well as in monocyte cultures of osteoporosis patients.
6. There was appreciably high levels expression of TNF-alpha and OPG mRNA in monocytes of osteoporosis patients.
7. 20 µg/ml of EGCG and 500 ng/ml of allicin exhibited no toxic effect on the viability of human house keeping gene R18.
8. Both, EGCG and allicin dose-dependently down-regulated the expression of TNF-alpha and OPG mRNA in monocytes of osteoporosis patients.
9. Both, EGCG and allicin that were separately co-cultured with PBMCs in osteoclastogenic medium for 3 and 5 days resulted in an appreciable amount of reduction in appearance of multinucleated osteoclast precursors. Hence, this reflects the potential of EGCG and allicin to exert regulatory effect in osteoclast generation and differentiation.
10. In comparison to healthy controls, osteoporosis patient’s cultures exhibited around 9-fold augmented levels of sRANKL.
11. Both allicin and EGCG dose-dependently decreased sRANKL secretion osteoporosis patients.
12. Both, EGCG and allicin exhibited potential antioxidant as well as anti-bone resorptive properties as suggested from results observed from down-regulation of bone markers like TNF, IL-1β, sRANKL and OPG.
Thus, in summary, based on the results, it is hoped that the present study would be of immense help in the better understanding of osteoporosis management by employing natural antioxidants.