6. SUMMARY AND CONCLUSION

The present investigation pertains to the expression profile of circulating miRNAs-21&146a of blood samples collected from breast cancer patients of Government Mohan Kumaramangalam Medical College Hospital (GMKMCH-Salem), from December, 2010 to February, 2011, the expression pattern of miRNAs (let-7a &g, 10b, 21&155) and clinicopathological features of FFPE-breast carcinoma specimens collected from the 2nd Department of Pathology, Semmelweis University (Budapest), the mutation analysis in the KRAS-oncogene of triple negative human breast cancer cell line and the miRNA-21 expression analysis in mutated KRAS-oncogene of triple negative breast cancer cell line after anticancer drugs treatment.

- The levels of circulating miRNAs-21&146a were found to be significantly higher in plasma samples of breast cancer patients as compared to healthy controls (p<0.0004 and p<0.005 respectively).
- Following the RFLP analysis of genomic DNA of triple negative breast cancer (TNBC) cell lines, the specificity of codons-12 & 13 was confirmed. And the KRAS mutation at codon-13 was confirmed by DNA sequencing in the MDA-MB-231 TNBC cell line.
- The miRNAs-21 & 155 were found to be significantly overexpressed in tissue samples of older breast cancer patients as compared to younger and corresponding normal samples.
- In the anticancer drugs (Doxorubicin, Docetaxel & Cisplatin) treated MDA-MB-231 TNBC cell line, the miRNA-21 expression was found to be reduced to -2.83 times by Docetaxel.
- The present study has generated important baseline data on miRNAs of breast cancer patients and the expression patterns of miRNAs-21 & 146a of plasma and tissue samples showed their potentiality as biomarkers, for early detection of breast cancer.
- Further studies, covering more number of samples, are warranted for validation of our findings.
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