SUMMARY AND CONCLUSION
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6.1. Summary:

The irradiated and EMS treated lymphocytes of Down's Syndrome and healthy individuals were analysed with a view to identify break points and also to compare the aberrations caused by EMS and radiation.

It was found that 2Gy of radiation produced aberrations like dicentrics, breaks fragments and rings in the DS patients. Similarly 1.0 X 10^{-4} M of EMS was able to induce aberrations in Down lymphocytes.

Although there were a variety of break points identified on exposure to EMS and radiation, they did not prove to be consistent. However the sites 9q34, on the long arm of the 9th chromosome was found to occur in the irradiated lymphocytes of 3 out of the 9 patients studied. Another site the 3q21 was found to break consistently in both EMS treated and irradiated cells. However, a break on the site on chromosome 9, 9q34, was found to occur in the irradiated cells of 3 DS patients. Most of the bands were clustered around the long chromosomes as when compared to the short chromosomes. This is in agreement with the finding of Dubos et al (1978) who reported increased number of breaks in the larger chromosomes (1to9 and X) and a relative deficiency of breaks in the smaller ones.

The present study shows that the sites of break points on the chromosomes of irradiated cells is nonrandom. However, there is need to carry out a detailed study employing different doses of radiation and EMS, to arrive at meaningful conclusion.
6.2. **Conclusion:**

a) The incidence of chromosomal aberrations was higher in irradiated lymphocytes than in EMS treated lymphocytes from DS patients at the doses employed.

b) Most of the break points were located on the large chromosomes namely those belonging to groups A, B and C.

c) The sites of the break points observed in irradiated lymphocytes were found to be nonrandom.

d) Break points seen in EMS treated lymphocytes were mostly found to overlap, with those seen in irradiated lymphocytes.

e) Comparison of the mutagen induced break points with known fragile sites showed a striking similarity between the rare fragile sites and the break points involved in the aberrations.