"A systemic review on the status of cancer genetic counselling in Eastern India"

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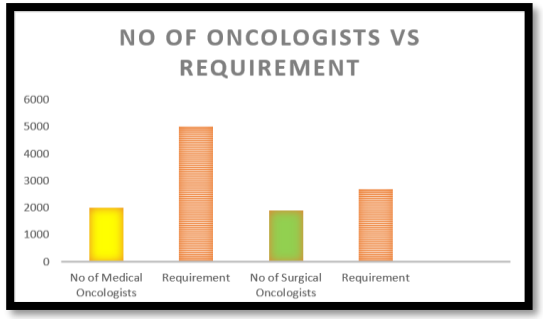
❖ Introduction

- **Cancer is the unregulated growth and division of cells in certain regions of the human body. Cancer can arise from various factors, but the primary determinant is the hereditary composition of a family.**
- **In most cases of cancer, somatic genetic alterations or mutations occur exclusively in the tumour cells, affecting Tumour Suppressor Genes or Oncogenes. Approximately 5-10% of cancer cases, there is a hereditary gene mutation (Germline).**
- **Special genetic analysis techniques, such as Next Generation Sequencing (NGS), can be used to identify these gene alterations. Identification of mutations in specific genes very important to guide the selection of targeted therapy, which can lead to improved tumour control.**
- **Individuals who have been identified as having an inherited risk for cancer benefit from receiving specialised cancer screening and prevention measures, which ultimately helps to save lives.**

Key words- Genetic Counselling, NGS, Diagnostics, Cancer, Awareness

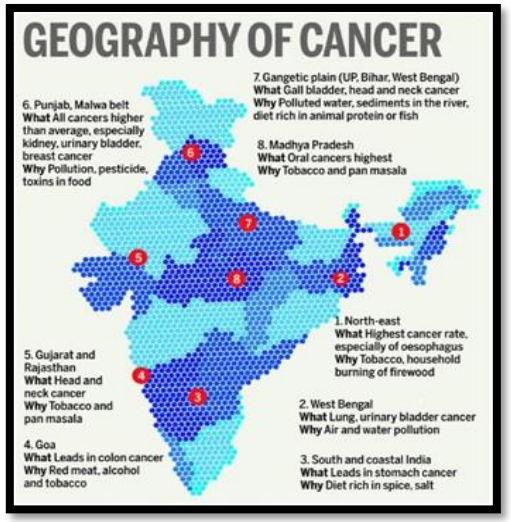


❖ Objective

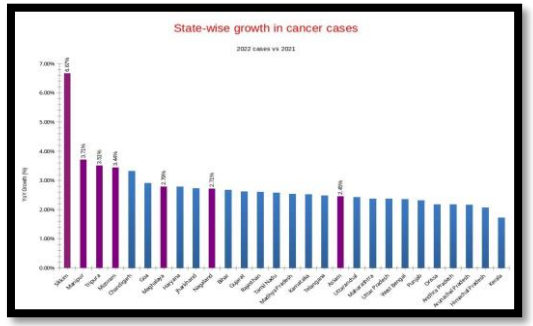
- **It is important to recognise that genetic counselling in cancer is distinct from counselling in cancer genetics.**
- **In this review, our objective was to cultivate awareness and draw attention to this particular issue.**

❖ Confined Gaps

Connectivity for informed choice among genetic- counsellors, oncologists and diagnostics.



https://nocr.org.in/NOCR/OralCancerinIndia



https://www.newindianexpress.com/nation/2023/Jul/28/northeast-india-continues-to-seealarming-rise-in-cancer-cases-2599563.html

❖ Analytics of current scenario

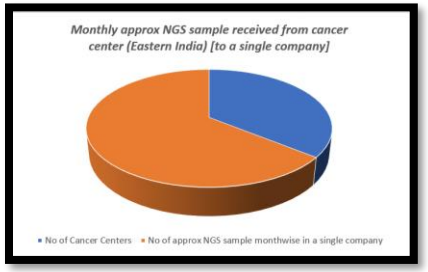
I. **According on existing indications and practice patterns, we anticipate that by 2025, around 75,000 (5%) out of the 1.5 million new cancer cases per year in India will get germline genetic testing.**

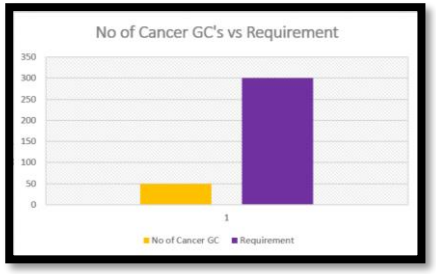
II. **Additionally, a comparable number of cases will undergo somatic NGS testing on tumour tissue or a Liquid Biopsy.**

III. **The intricacy of NGS testing is likewise escalating, with more frequent use of larger panels or exome sequencing and more intricate genetic analysis.**

IV. **The main obstacle to the future expansion of Onco-Genomics will be the successful incorporation of the identified genomic discoveries into clinical practice, especially when it comes to pathogenic variants in genes that have less established relevance or variations with unclear clinical significance (VUS) in genes that have a high likelihood of causing disease or can be targeted for treatment.**

V. **However, the availability of genetic counselling services in cancer centres is severely limited in relation to the number of patients seeking assistance**





❖ Concluding opinions

- ***India now has only a few cancer genetic counsellors available, but to meet the minimum requirement of one counsellor for every 500 NGS tests, the country would need a total of 300 cancer genetic counsellors.***
- ***A systematic approach towards awareness in every level of healthcare and also proper training to the practicing counsellors in cancer genetics might be fruitful.***