Signet Ring Cell Carcinoma (SRCC)

Prelims – *General Science.*

Mains (GS II) *- Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.*

Why in News?

A team of scientists has developed new ways to better understand and treat signet ring cell carcinoma (SRCC).

- It is a ***rare form of colon cancer (CRC)*** and is considered one of the deadliest subtypes of the disease.

  Colon cancer, also known as colorectal cancer, is a type of cancer that originates in the large intestine (colon) or rectum.

- It gets its name from the signet ring-like appearance (a finger ring with a flat top) of its cancer cells under a microscope.
- It most commonly develops in the ***gastrointestinal tract***, particularly the stomach, but can also occur in the colon and other organs. It spreads quickly.
- **Symptoms –** Indigestion, Abdominal pain, Nausea and vomiting, Diarrhea, Bloody stools, Fatigue, Joint pain, Pallor (paleness, fast heartbeat and trouble breathing).
- **Prevalence** - CRCs are the 3rd most common cancer and the 2nd leading cause of cancer deaths in the world. Globally, this type of cancer constitutes about **1%** of all cases of CRC.
- It resists conventional therapies, and is often diagnosed at advanced stages.
- **Severity -** It has the tendency to spread to the peritoneum.

  The peritoneum is a smooth, transparent membrane that lines the abdominal cavity and covers most of the organs in the abdomen.

- **Treatment -** Surgery, chemotherapy, and other therapies, often used in a multidisciplinary approach.

Recent Findings of the study

- Researchers have developed miniature representations of *actual human SRCC tumors* cultivated in laboratory petri dishes and subsequently implanted into mice.
- It provides valuable opportunity to investigate cancer in detail and evaluate potential

therapies within a controlled setting.

- The research has revealed *distinct molecular traits of SRCC* that clarify its resistance to conventional chemotherapy.
- The research team also explore a variety of drug combinations to identify therapeutic vulnerabilities, specific weaknesses that could be targeted with focused treatments.
- Among the most encouraging outcomes of the study was the testing of a novel three-drug combination, which not only reduced tumor size but also inhibited the cancer's progression in laboratory models.

Reference

The Indian Express | Signet Ring Cell Carcinoma (SRCC)

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