IVERMECTIN IN CANCER TREATMENT: SCHOLARLY EVALUATION

CanSurvive Australia

Overview

Ivermectin, a well-known anti-parasitic drug, has garnered research interest for potential anticancer properties. While lab-based studies are promising, clinical validation is limited. This report provides a rigorous analysis of its mechanisms, supporting research, and current standing.

Mechanisms of Action (Preclinical)

• Induces cancer cell death: Promotes apoptosis, autophagy, and pyroptosis across multiple cancer cell types.

• Inhibits proliferation pathways: Suppresses WNT/β-catenin, Akt/mTOR, and MAPK signalling to stop cell replication.

• Blocks metastasis: Inhibits PAK1 and other regulators of cytoskeletal rearrangement to prevent tumour spread.

• Overcomes chemotherapy resistance: Downregulates EGFR/ERK/Akt/NF-κB, restoring chemo sensitivity in resistant cells.

• Anti-angiogenesis: Reduces VEGF and other signals needed to form new blood vessels feeding tumour tissue.

Key Preclinical and In Vitro Studies

• Pancreatic Cancer
Ivermectin in combination with gemcitabine caused G1 cell cycle arrest and apoptosis in human pancreatic cell lines.

Source: https://aacrjournals.org/cancerres/article/82/12_Supplement/2320/701043/Abstract-2320-Ivermectin-suppresses-pancreatic

• Esophageal Squamous Cell Carcinoma (ESCC)

Mitochondrial dysfunction and ROS generation induced apoptosis in ESCC lines exposed to ivermectin.

Source: https://bmccancer.biomedcentral.com/articles/10.1186/s12885-021-09021-x

• Colorectal Cancer

Dose-dependent inhibition of proliferation and induced apoptosis in colorectal cancer cells.

Source: https://www.frontiersin.org/articles/10.3389/fphar.2021.717529/full

Clinical Trials and Human Data

• Triple-Negative Breast Cancer Trial (NCI-2022-02421)

A Phase II trial testing ivermectin with pembrolizumab for metastatic TNBC. Status: Withdrawn.

Clinical Trials Registry: https://www.cancer.gov/research/participate/clinical-trials-search/v?id=NCI-2022-02421

• Colorectal & Prostate Cancer Clinical Study (NCT05318469)

Investigates ivermectin monotherapy for tumour regression in a mixed cohort.

Registry: https://clinicaltrials.gov/study/NCT05318469

Safety and Regulatory Status

• Approved as an anti-parasitic; not approved for cancer treatment by the FDA, EMA, TGA or other major regulatory bodies.

• Anticancer doses used in vitro often exceed safe human thresholds.

• Off-label use outside of trials may present toxicity risks.

Expert Summary

1. **Ivermectin shows credible anticancer potential in vitro and in vivo preclinical models.**
2. **Multiple mechanisms make it a candidate for multi-target therapies, especially when used synergistically.**
3. **However, there is no confirmed clinical efficacy from randomised controlled trials.**
4. **Its use should remain within ethically approved clinical trials only.**
5. **Caution is warranted when interpreting anecdotal or non-peer-reviewed claims online.**

Verified Reference Sources

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