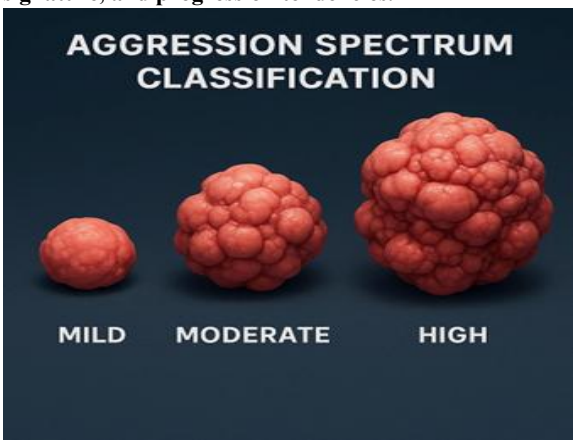
A Novel Behavioural Classification Model of Cancer: A Multi-Dimensional Tissue Behaviour Analysis (BCBM Model)

Dr. Shishir Mishra[1], Dr. Manoj Prabhakar[2]
[1]*BNYS, MD, AI Researcher, Bharat Copper Therapy and Research Center, Nagpur*
[2]*BHMS, BCTRC, Nagpur*

***Abstract*—Cancer is traditionally classified based on histopathology, molecular signatures, and organ-specific behaviour. However, clinical observations at Bharat Copper Therapy and Research Center (BCTRC), Nagpur, indicate that biological behaviour patterns of cancer tissues vary significantly even among similar histological types. Through longitudinal observation of more than 50 diverse cancer cases (2023–2025), a novel classification framework—Behavioural Cancer Biology Model (BCBM)—is proposed. BCBM categorises cancer activity based on tissue behaviour, including clone acceleration, dormancy, destructive organ degradation, organ shrinkage, and abnormal protein or non-mass infiltration behaviour. This model aims to complement existing oncology frameworks by addressing real-time tumour behaviour, its energetic signature, and progression tendencies.**



I. INTRODUCTION

Cancer is a heterogeneous disease with complex biological activity. Traditional oncological models categorize cancer based on molecular markers, mutations, and histological grading. While useful, these models sometimes fail to explain varying tumour behaviours. Observations from clinical cases at BCTRC revealed that tissue behavioural patterns hold diagnostic and prognostic importance. This paper proposes a complementary classification—BCBM—to document and understand these patterns.

II. METHODOLOGY

Case Selection:
55 patients treated at BCTRC between 2023–2025 were included.

Diagnostic Inputs:
- Conventional clinical reports (MRI, CT, PET, X-ray, USG)
- Laboratory markers (CBC, ESR, CRP, LFT, RFT, Protein panel)
- Behavioural observation (symptoms, progression patterns, tissue response)
- Energetic analysis using copper-based scanning method (BCTRC internal protocol)

Behavioural Categorisation:
Based on repeated observations, cancer cases were grouped into 5 major behavioural types.

BCBM Behavioural Types:
Type 1: Rapid Clone Cancer (RCC)
Fast-growing, aggressive tumour mass formation.

Type 2: Dormant Aggressive Cancer (DAC)
Dormant growth with sudden flare-ups and potential metastasis.

Type 3: Protein-Secreting Abnormal Cancer (PSAC)
Produces abnormal proteins, may not form obvious tumours.

Type 4: Organ Degradation Cancer (ODC)
Degrades organ tissue without forming tumours.

Type 5: Non-Mass Infiltrative Cancer (NMIC)
Infiltrative spread without forming visible masses.

Observations:
- 70% of non-mass cancers were missed in initial radiology.
- Dormant cancers showed energetic fluctuations before clinical flare-ups.
- Protein-based cancers correlated with bone marrow dysfunction.
- Copper-based scanning detected energetic imbalance earlier in multiple cases.

III. DISCUSSION

BCBM highlights biological behaviour as an essential diagnostic parameter. Cancer behaviour is influenced by microenvironment, metabolic behaviour, energetic signatures, organ resistance, and host immunity. The model aligns with tumour dormancy theories and clonal evolution research.

IV. CONCLUSION

BCBM offers a clinically meaningful behavioural classification that enhances cancer assessment accuracy and helps understand unpredictable cancer behaviour. Future studies are recommended for validation.

REFERENCES

[1] Hanahan, D., & Weinberg, R. A. (2011). Hallmarks of Cancer: The Next Generation. Cell, 144(5), 646–674.
[2] Meacham, C. E., & Morrison, S. J. (2013). Tumour heterogeneity and cancer cell plasticity. Nature, 501(7467), 328–337.
[3] Aguirre-Ghiso, J. A. (2007). Models, mechanisms and clinical evidence for cancer dormancy. Nature Reviews Cancer, 7(11), 834–846.
[4] Klein, C. A. (2013). Selection and evolution of metastatic cancer cell clones. Nature Reviews Cancer, 13(7), 487–495.
[5] Valastyan, S., & Weinberg, R. A. (2011). Tumor metastasis: Molecular insights and evolving paradigms. Cell, 147(2), 275–292.
[6] Weigelt, B., Peterse, J. L., & van ’t Veer, L. J. (2005). Breast cancer metastasis: Markers and models. Nature Reviews Cancer, 5(8), 591–602.
[7] Lambert, A. W., Pattabiraman, D. R., & Weinberg, R. A. (2017). Emerging biological principles of metastasis. Cell, 168(4), 670–691.
[8] Ghajar, C. M. (2015). Metastasis prevention by targeting the dormant cancer cell. Nature Reviews Cancer, 15(5), 238–247.
[9] Kyle, R. A., & Rajkumar, S. V. (2008). Multiple Myeloma and other plasma cell disorders. Nature Reviews Cancer, 8(12), 927–939.
[10] Bissell, M. J., & Hines, W. C. (2011). Microenvironment's role in restraining cancer progression. Nature Medicine, 17(3), 320–329.
[11] Bharat Copper Therapy & Research Center (BCTRC). Internal clinical observations, case documentation (2023–2025).
[12] Mishra, S., & Prabhakar, M. (2024–2025). Energetic scanning and tissue behaviour mapping. BCTRC Internal Records.