

## The Confounding Role of Graft-versus-Host Disease in Animal Models of Cancer Immunotherapy: A Systematic Review

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**Abstract :** Introduction: The landscape of cancer treatment has been revolutionized by immunotherapy, offering novel therapeutic avenues for diverse cancer types. Animal models play a pivotal role in the development and elucidation of these therapeutic modalities. Nevertheless, the manifestation of Graft-versus-Host Disease (GVHD) in such models poses significant challenges, muddling the interpretation of experimental data within the ambit of cancer immunotherapy. This study is dedicated to scrutinizing the role of GVHD as a confounding factor in animal models used for cancer immunotherapy, alongside proposing viable strategies to mitigate this complication. Method: Employing a systematic review framework, this study undertakes a comprehensive literature survey including academic journals in PubMed, Embase, and Web of Science databases and conference proceedings to collate pertinent research that delves into the impact of GVHD on animal models in cancer immunotherapy. The acquired studies undergo rigorous analysis and synthesis, aiming to assess the influence of GVHD on experimental results while identifying strategies to alleviate its confounding effects. Results: Findings indicate that GVHD incidence significantly skews the reliability and applicability of experimental outcomes, occasionally leading to erroneous interpretations. The literature surveyed also sheds light on various methodologies under exploration to counteract the GVHD dilemma, thereby bolstering the experimental integrity in this domain. Conclusion: GVHD's presence critically affects both the interpretation and validity of experimental findings, underscoring the imperative for strategies to curtail its confounding impacts. Current research endeavors are oriented towards devising solutions to this issue, aiming to augment the dependability and pertinence of experimental results. It is incumbent upon researchers to diligently consider and adjust for GVHD's effects, thereby enhancing the translational potential of animal model findings to clinical applications and propelling progress in the arena of cancer immunotherapy.

**Keywords :** graft-versus-host disease, cancer immunotherapy, animal models, preclinical model

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