

# Review of: "[Case Study] Genetic and Clinical Insights into Congenital Leukemia in a Newborn Conceived via IVF: A Rare Case Study of Congenital Leukemia in One of the Separate Twins"

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**Potential competing interests:** No potential competing interests to declare.

This case study is a valuable contribution to the fields of pediatric hematology and reproductive medicine. It underscores the importance of genetic screening, personalized care, and further research into the genetic risks associated with IVF. While the study has certain limitations, its novelty and clinical relevance make it a significant addition to the literature. The abstract effectively introduces the rarity and clinical significance of congenital leukemia, emphasizing the importance of understanding its genetic underpinnings and its association with IVF. The mention of the MLL gene as a key player in leukemogenesis is appropriate, given its established role in hematological malignancies. However, the abstract could benefit from more specific details on the therapeutic approach and outcomes for the patient, which would provide a clearer overview of the case's significance. The introduction sets the stage by outlining the clinical challenges posed by congenital leukemia. It appropriately contextualizes the condition's rarity and highlights the involvement of the **MLL gene** in leukemogenesis. The discussion of nonspecific clinical features such as hepatosplenomegaly and thrombocytopenia aligns with established literature, and the focus on molecular genetics offers a solid foundation for the study. The conclusion effectively summarizes the findings and their clinical implications, particularly the need for personalized diagnostic strategies and the importance of optimizing IVF protocols. However, the conclusion could offer more specific recommendations for future research directions, such as:

1. Investigating the impact of culture conditions and IVF protocols on genomic stability.
2. Exploring interventions to mitigate genetic risks in IVF-conceived pregnancies.

## **Areas for Improvement:**

1. While this case is labeled as the first documented instance of congenital leukemia in an IVF-conceived twin, comparisons with similar cases (if any exist) or discussions on IVF-associated risks would enrich the narrative.
2. The potential genetic and health outcomes for the unaffected twin and the implications for family genetic counseling are briefly mentioned but merit further exploration.