Review of: "The tumour microenvironment in BRCA1/BRCA2 hereditary breast cancer and the role of epigenetics in its regulation"

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Potential competing interests: No potential competing interests to declare.

This article discusses the role of the tumor microenvironment in hereditary breast cancer, particularly in individuals with BRCA1 and BRCA2 pathogenic variants (PVs), and the influence of epigenetics on this microenvironment. Below are some comments and suggestions for improvement:

1. It would be helpful to include specific examples or case studies to illustrate how epigenetic changes in BRCA1/2 carriers affect the TME.
2. Consider briefly explaining the mechanisms of action of BRCA1/2 in DNA repair.
3. The explanation regarding the impact of BRCA1 PVs on elevated local estrogen levels is clear and well-supported. It's crucial to connect this to its relevance in tumorigenesis.
4. The discussion about BRCA1/2 PVs affecting angiogenesis and the role of hypoxia-inducible factors (HIF) is informative. Providing data or statistics on the increased expression of VEGF and HIF in BRCA1/2 PVs compared to sporadic breast cancers would enhance the argument.
5. The explanation of how BRCA1/2 PVs influence the immune response, particularly through the cGAS/STING pathway, is detailed and provides insights into the immunosuppressive mechanisms in these cancers. Consider mentioning any potential therapeutic implications of these findings, such as immunotherapy approaches.
6. You might want to provide a brief summary of the current status of clinical trials or applications of LSD-1 inhibitors in breast cancer treatment.
7. Consider adding a brief conclusion section that summarizes the main points discussed in the article and their implications for future research or clinical applications.
8. Incorporating visual aids, such as figures or tables, to illustrate key concepts or data could enhance the article's overall presentation and understanding.