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Current Landscape of Melanoma Clinical Trials Involving Artificial Intelligence

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*Abstract***Current Landscape of Melanoma Clinical Trials Involving Artificial Intelligence**Raghuram Reddy¹, Karla Santoyo²¹ Herbert Wertheim College of Medicine, Florida International University, Miami, FL, USA; rredd021@fiu.edu² Herbert Wertheim College of Medicine, Florida International University, Miami, FL, USA; ksant088@fiu.edu

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Objective: Leveraging advanced artificial intelligence (AI) tools can enhance melanoma diagnosis and care by supporting physician decision-making. **Methods:** A search for melanoma studies using AI was conducted on ClinicalTrials.gov (US National Library of Medicine) on August 20, 2024. **Results:** 26 studies involving melanoma and artificial intelligence resulted from the search with a total enrollment size of 69,609 people. Recruitment status for these 26 studies were as follows: 1 study (3.85%) was not yet recruiting, 6 (23.08%) were recruiting, 3 (11.54%) were active/no recruiting, 9 (34.62%) were completed, 2 (7.69%) were enrolling by invitation, and 5 had an unknown status. Concerning age, 5 studies included children (birth-17 years), 25 (96.15%) included adults (18-64 years), and 25 (96.15%) included older adults (65+ years). Regarding study type, 10 studies (38.46%) were interventional studies, and 16 (61.53%) were observational. In terms of funding, 6 studies (23.08%) were funded by industry, whereas 23 studies (88.46%) were funded by other sources. Sweden was the location for the most studies (n=4, 15.38%), followed by Spain (n=3, 11.54%) and United Kingdom (n=3, 11.54%). 21 studies (80.77%) focused on AI-aided diagnosis of melanoma (3.85%), based a variety of techniques ranging from total-body photography to mole-mapping over time. **Conclusion:** Artificial intelligence is poised to significantly impact melanoma care by improving early diagnosis and being integrated into the Mohs micrographic surgery workflow.

Keywords: Melanoma, Artificial Intelligence, ClinicalTrials.gov, Diagnosis, Image Analysis

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