



Circulating Biomarkers for Preoperative Diagnosis of Uterine Sarcoma: Systematic Review and Meta-Analysis

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OBJECTIVES/AIMS

A way to improve the early diagnosis of uterine sarcoma’s is by identifying circulating protein biomarkers differentiating between uterine sarcoma and benign leiomyomas. However, to date, there is no systematic review gathering data on the diagnostic accuracy of these biomarkers as diagnostic tools for uterine sarcomas.

METHODS

We performed a systematic review and meta-analysis. An electronic search was conducted using Pubmed, EMBASE, Web of Sciences, CENTRAL (Cochrane) to identify clinical studies investigating the diagnostic role of circulating biomarkers for the diagnosis of uterine sarcoma. We selected only studies that compared patients with histologically confirmed diagnosis of leiomyoma versus uterine sarcoma. This study was conducted according to Preferred Reporting Items for a Systematic Review and Meta-analysis of Diagnostic Test Accuracy Studies (PRISMA-DTA) statement.

CONCLUSIONS

This systematic review and meta-analysis showed that the most encouraging results were available for LDH. Other biomarkers may also prove to be useful tools in differentiating between leiomyomas and uterine sarcomas; however further studies are needed to replicate these findings.

RESULTS

A total of 20 observational studies were included. We identified 13 biomarkers and five of them reported data on diagnostic accuracy including sensitivity and specificity. LDH levels showed a statistically significant difference between uterine sarcoma patients and leiomyoma controls (p<0.001), with a sensitivity and specificity ranging between 0.47 to 1.00 and 0.86 to 1.00, respectively. Three studies reported data on diagnostic accuracy of CA125: the estimates for sensitivity and specificity ranged from 0.43 to 0.64 and 0.50 to 0.77, respectively, with substantial heterogeneity between the studies. Data on diagnostic accuracy for CPR was available for two studies, with sensitivity and specificity, ranging between 0.84 to 0.87 and 0.83 to 0.89, respectively. Data for two biomarkers, HE-4 and D-dimer, were insufficient, as each was evaluated in only one study.

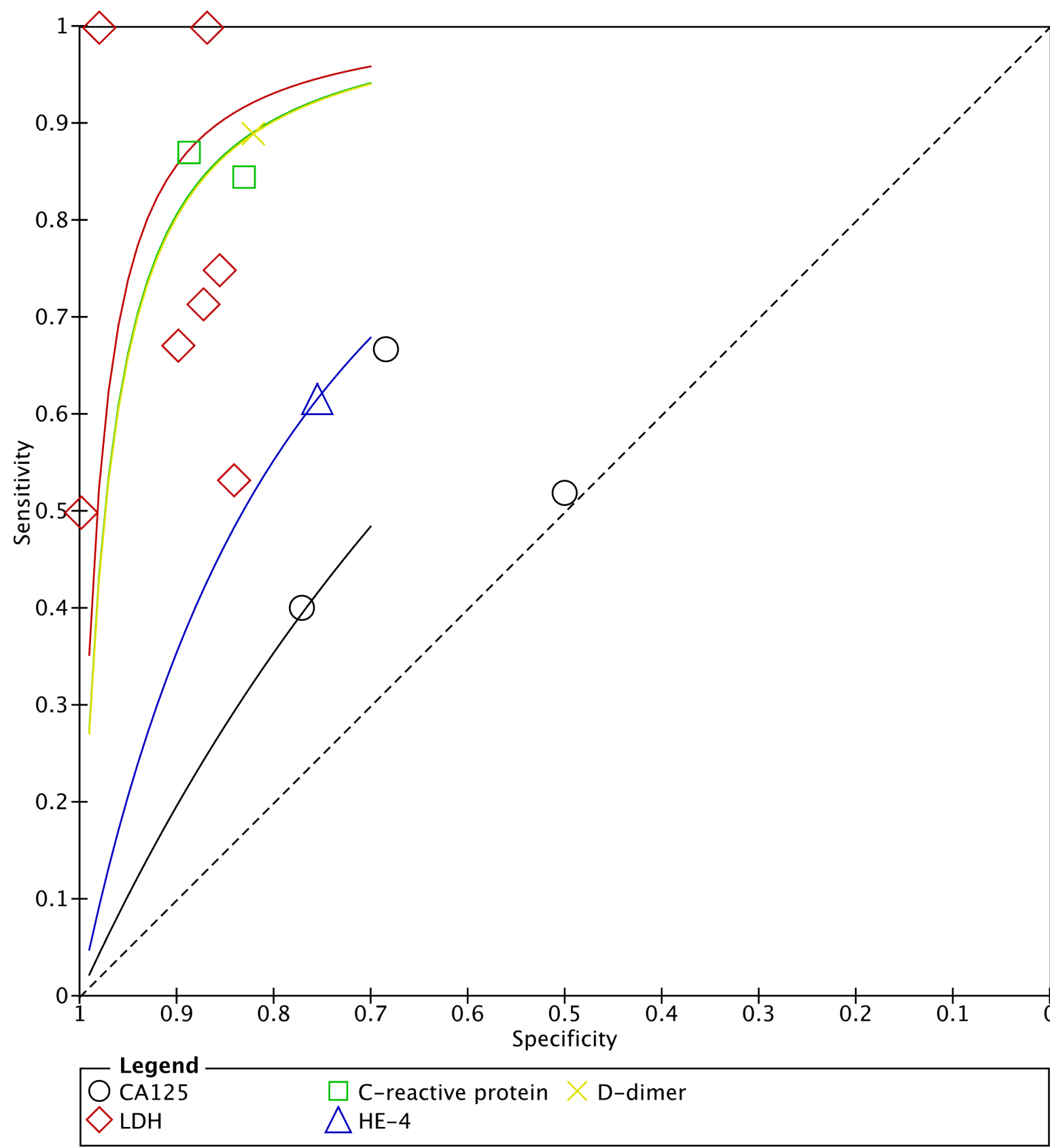
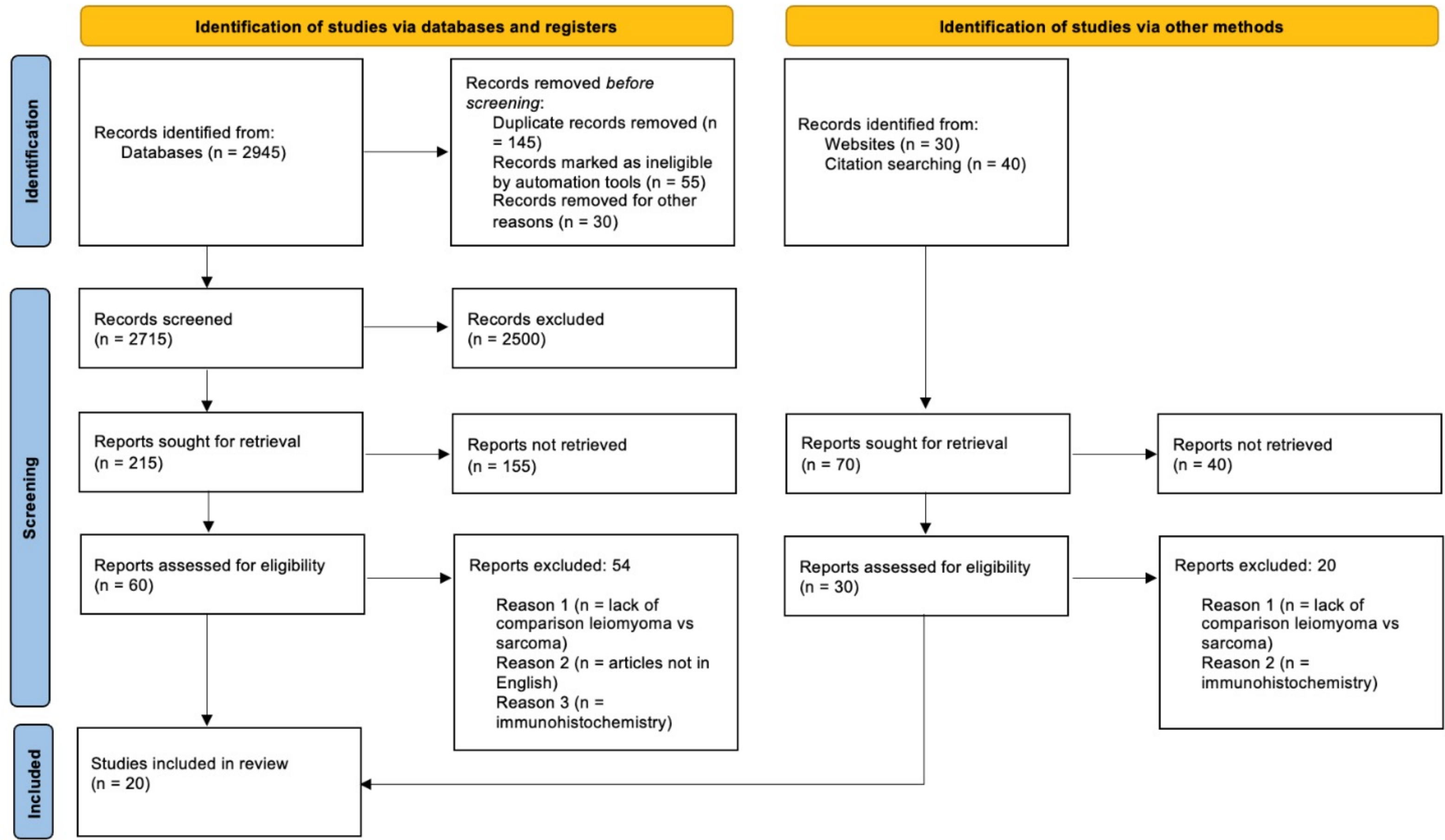


Figure 2. Summary ROC plot of tests CA125, LDH, C-reactive protein, D-dimer, HE-4 for the preoperative diagnosis of uterine sarcoma.

REFERENCE

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