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The effectiveness of a routine versus an extensive laboratory analysis in the diagnosis of anemia in general practice

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Background: We investigated the percentage of patients diagnosed with the correct underlying cause of anemia by general practitioners when using an extensive versus a routine laboratory work-up.

Methods: An online survey was distributed among 836 general practitioners. The survey consisted of six cases, selected from an existing cohort of anemia patients (n=3325). In three cases, general practitioners were asked to select the laboratory tests for further diagnostic examination from a list of 14 parameters (i.e. routine work-up). In the other three cases, general practitioners were presented with all 14 laboratory test results available (i.e. extensive work-up). General practitioners were asked to determine the underlying cause of anemia in all six cases based on the test results, and these answers were compared with the answers of an expert panel.

Results: A total of 139 general practitioners (partly) responded to the survey (17%). The general practitioners were able to determine the underlying cause of anemia in 53% of cases based on the routine work-up, whereas 62% of cases could be diagnosed using an extensive work-up (p=0.007). In addition, the probability of a correct diagnosis decreased with the patient's age and was also affected by the underlying cause itself, with anemia of chronic disease being hardest to diagnose (p=0.003). Conclusion: the use of an extensive laboratory work-up in patients with newly diagnosed anemia is expected to increase the percentage of correct underlying causes established by general practitioners. Since the underlying cause can still not be established in 31% of anemia patients, further research is necessary.

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