

Abstract

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Association of laboratory-defined aspirin resistance with a higher risk of recurrent cardiovascular events: a systematic review and meta-analysis.

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BACKGROUND: The risk of recurrence of cardiovascular events among patients using aspirin (acetylsalicylic acid) for secondary prevention of such events remains high. Persistent platelet reactivity despite aspirin therapy, a laboratory-defined phenomenon called aspirin resistance (hereinafter, laboratory aspirin resistance), might explain this in part, but its actual contribution to the risk remains unclear.

OBJECTIVE: The objective of this study was to systematically review all available evidence on whether laboratory aspirin resistance is related to a higher risk of cardiovascular recurrent events.

METHODS: Using a predefined search strategy, we searched electronic databases. To be included in our analysis, articles had to report on patients who used aspirin for secondary cardiovascular prevention, had to contain a clear description of a method to establish the effects of aspirin on platelet reactivity, and had to report recurrence rates of cardiovascular events. Odds ratios of cardiovascular outcome of eligible studies were pooled in a random-effects model.

RESULTS: We included 15 full-text articles and 1 meeting abstract. Fifteen of these studies revealed an adverse association between laboratory aspirin resistance and occurrence of cardiovascular events. The pooled odds ratio of all cardiovascular outcomes was 3.8 (95% confidence interval, 2.3-6.1) for laboratory aspirin resistance.

CONCLUSION: This systematic review and meta-analysis shows that patients biochemically identified as having laboratory aspirin resistance are more likely to also have "clinical resistance" to aspirin because they exhibit significantly higher risks of recurrent cardiovascular events compared with patients who are identified as (laboratory) aspirin sensitive.

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