The devastating power of platelets in COPD exacerbations: can aspirin save lives in COPD?

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The human and societal burden of COPD is alarming. Despite large reductions in smoking rates across industrialised nations, COPD mortality has increased by 60% over the past 20 years, making it the second leading cause of morbidity and mortality in the USA and elsewhere.1 Most of the COPD-related deaths occur during or shortly following acute exacerbations (or ‘lung attacks’). Unfortunately, severe lung attacks are common, with one in six patients requiring hospitalisation for urgent care each year.2 Despite best therapy, 1 in 12 of these patients will succumb to their disease in hospital.3 Even those who survive will experience persistent morbidity from their recent lung attack and never regain their lost health status. Furthermore, one in three patients will have another lung attack in 6–12 months.3 Regrettably, acute and chronic treatments for COPD are suboptimal. Despite global drug expenditures that exceed $36 billion annually for COPD care,4 none of the currently available drugs reduces mortality or modifies disease progression as defined by rate of decline in lung function.5 Although the existing drugs produce symptomatic benefits and ameliorate exacerbations, the effect is very modest, reducing the risk of exacerbations by only 10–25%, even in multiple combinations.5 Drug discovery has been slow and largely disappointing, largely owing to poor understanding of disease pathobiology, inadequate phenotyping, suboptimal use of animal models and the high cost (and risk) of drug development.

To address these gaps, there has been a growing interest in developing simple blood-based biomarkers of disease activity in COPD. Although there has been tremendous progress in this area over the past decade, there are no commercially available blood tests that can be used for this purpose and it will take years before promising novel biomarkers make it to the clinics. The paper by Harrison and colleagues in this issue of Thorax offers a new approach to biomarker and therapeutic discovery that may enable more rapid clinical translation.6 Instead of relying on discovery of de novo protein or genomic signatures, Harrison and colleagues assessed the prognostic value of blood platelet count, which is widely available, cheap and well standardised, during acute lung attacks of COPD. In this large, well conducted cohort study of 1343 patients, who were hospitalised for an exacerbation, they found that thrombocytosis defined as a blood platelet count of >400 × 109 cells/mm3 was associated with a 137% increase in the risk of inhospital mortality and a 53% increase in 1-year mortality. Most importantly, they observed that treatment with an anti-platelet drug such as aspirin or clopidogrel was associated with a three-fold reduction in the 1-year mortality rate.6 Interestingly, none of this appeared important lead to novel therapeutic targets, which are urgently needed to confront the growing worldwide burden of COPD that is taking the breath away from hundreds of millions of patients each year.

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REFERENCES


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Editorial


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