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New onset atrial fibrillation – optimising electrocardiographic diagnostic accuracy and appropriate anticoagulation: a district general hospital experience

Authors: Samuel Younan,[A] Ravi Ganapathy[A] and Anna Vassiliou[A]

Introduction

New-onset atrial fibrillation (NOAF) is one of the commonest cardiac arrhythmias encountered in hospitalised patients and is associated with significant morbidity and mortality.[1,2] Although uncertain, the incidence of NOAF in acutely hospitalised patients ranges from 1–44%.[3] The appropriate use and safe dosage of anticoagulation reduce the risk of all-cause mortality by around one-quarter and the risk of ischaemic stroke by two-thirds.[4] Research has shown that the rate of overdiagnosis of atrial fibrillation is relatively high, with subsequent inappropriate anticoagulation proving to be detrimental to patient safety.[5]

Materials and methods

We conducted a closed-loop audit cycle to assess the incidence of NOAF overdiagnosis based on a 12-lead electrocardiogram (ECG). In the first cycle, electronic hospital records were screened retrospectively for a diagnosis of atrial fibrillation between December 2020 and December 2021. Discharge summaries were reviewed to select patients meeting the inclusion criteria, which involved patients with NOAF diagnosed during hospital admission and newly started on anticoagulation. ECGs were evaluated in accordance with European Society of Cardiology criteria and two independent clinicians' consensus. Similar methods were applied for the second cycle conducted for data collected between October and November 2022, with a prospective approach being used. The parameters used in the audit included whether the diagnosis of NOAF was correct, whether patients were inappropriately anticoagulated, and whether the dose of anticoagulation commenced was correct. Recommendations made after the first cycle were actioned before re-auditing.

Results and discussion

In the first cycle, 32 patients were included in the data analysis. Seven patients (21%) were incorrectly diagnosed with NOAF and four (12.5%) were unnecessarily anticoagulated with an ensuing development of adverse events in one of the patients. Two patients (6%) were prescribed the wrong dose for anticoagulation. An awareness-raising campaign was conducted in the hospital. This included multiple teaching sessions in departmental meetings, circulation of posters around the hospital, and liaising with the pharmacy department to validate the prescribed dose of anticoagulation. A recommendation was made for the need for the involvement of two independent clinicians in the decision-making for the accurate diagnosis of atrial fibrillation or specialist involvement, if uncertain. In the second cycle, we included the same number of patients and used similar comparative parameters. Only four patients (8%) were misdiagnosed with atrial fibrillation and none of them (0%) were inappropriately anticoagulated or prescribed the wrong dose of anticoagulation. This reduction in misdiagnosis and inappropriate or incorrectly dosed anticoagulation was related to the use of a more cautious approach by clinicians when confirming the diagnosis of NOAF and deciding to commence anticoagulation.

Conclusion

Increased awareness among physicians of the need for diagnostic accuracy of NOAF and appropriate anticoagulation has resulted in significant improvements that have led to the minimisation of potential harm to patients and improved safety standards. We aim to use these data to help develop a cardiac arrhythmia service at our hospital, which will further improve the diagnosis and management of NOAF and other arrhythmias. ■

References

1 Walkey AJ, Wiener RS, Ghobrial JM, Curtis LH, Benjamin EJ. Incident stroke and mortality associated with new-onset atrial fibrillation in patients hospitalized with severe sepsis. *JAMA* 2011;306:2248–54. doi:10.1001/jama.2011.1615.
2 Massera D, Wang D, Vorchheimer DA, Negassa A, Garcia MJ. Increased risk of stroke and mortality following new-onset atrial fibrillation during hospitalisation. *Europace* 2017:929–36,
3 McIntyre WF, Um KJ, Cheung CC *et al*. Atrial fibrillation detected initially during acute medical illness: A systematic review. *Eur Heart J Acute Cardiovasc Care* 2019;8:130–41.
4 Ruff CT, Giugliano RP, Braunwald E *et al*. Comparison of the efficacy and safety of new oral anticoagulants with warfarin in patients with atrial fibrillation: a meta-analysis of randomized trials. *Lancet* 2014;383:955–62.
5 Shiyovich A, Wolak A, Yacobovich L, Grosbard A, Katz A. Accuracy of diagnosing atrial flutter and atrial fibrillation from a surface electrocardiogram by hospital physicians: analysis of data from internal medicine departments. *Am J Med Sci* 2010;340:271–5.

Authors: [A]Medway NHS Foundation Trust