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Agreement among drug interaction databases for direct oral anticoagulants

D. GARCIA MARTINEZ[1], I. MORONA MINGUEZ[2], A. POUSADA FONSECA[1], A. GONZALEZ FUENTES[1], M. CARRERA SANCHEZ[1], L. FERNANDEZ VALENCIA[1], M. ANDRINO RODRIGUEZ[1], P. VEGA GONZALEZ[1], A. MARTINEZ FERRERO[1], S. DE MIGUEL RUIZ[1], M. SEGURA BEDMAR[1]
[1]HOSPITAL UNIVERSITARIO DE MÓSTOLES, FARMACIA HOSPITALARIA, MÓSTOLES, SPAIN.
[2]DIRECCION ASISTENCIAL NORTE. GERENCIA ASISTENCIAL DE ATENCIÓN PRIMARIA, SERVICIO DE FARMACIA DE ATENCIÓN PRIMARIA, MADRID, SPAIN.

BACKGROUND AND IMPORTANCE

Direct oral anticoagulants (DOACs) are widely prescribed in various clinical settings. Their potential to interact with other drugs is a significant concern. Multiple drug interaction databases are consulted in clinical practice, though agreement between them in classifying DOAC interactions is largely unknown.

AIM AND OBJECTIVES

To assess inter-database agreement in the classification of interaction severity for each DOAC.

MATERIAL AND METHODS

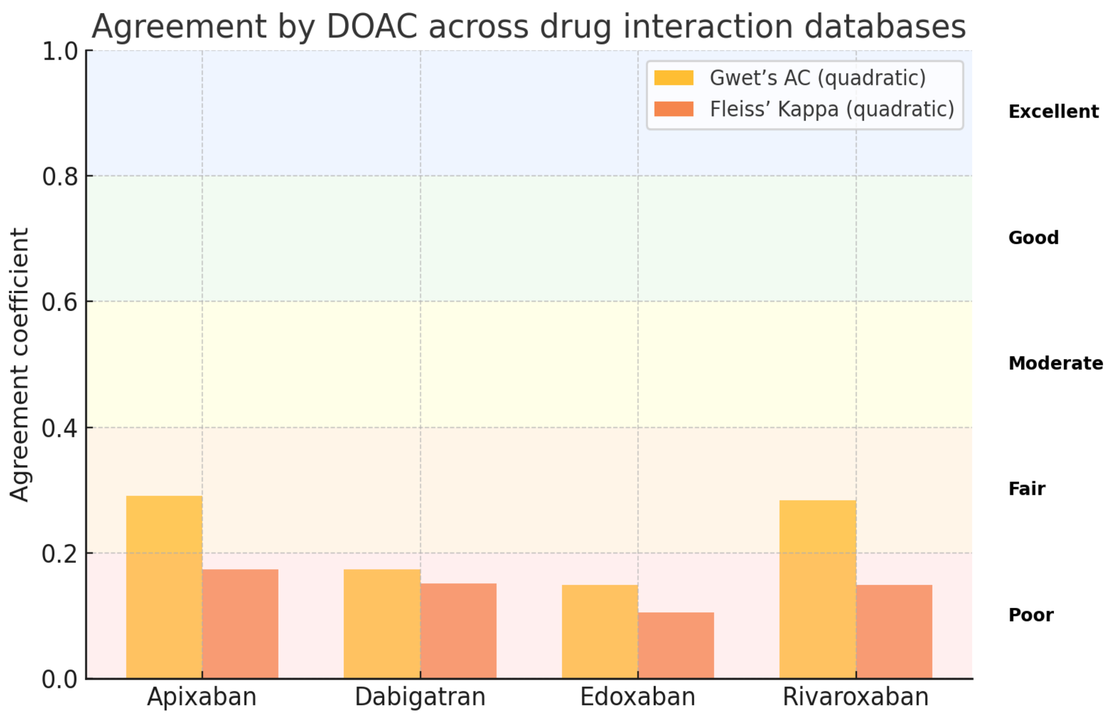
A cross-sectional observational study was conducted using four drug interaction databases (Lexicomp, Medinteract-SEFH, Micromedex, and Drugs.com). All interactions for apixaban, dabigatran, edoxaban, and rivaroxaban were retrieved. Severity ratings from each database were harmonised into four categories:

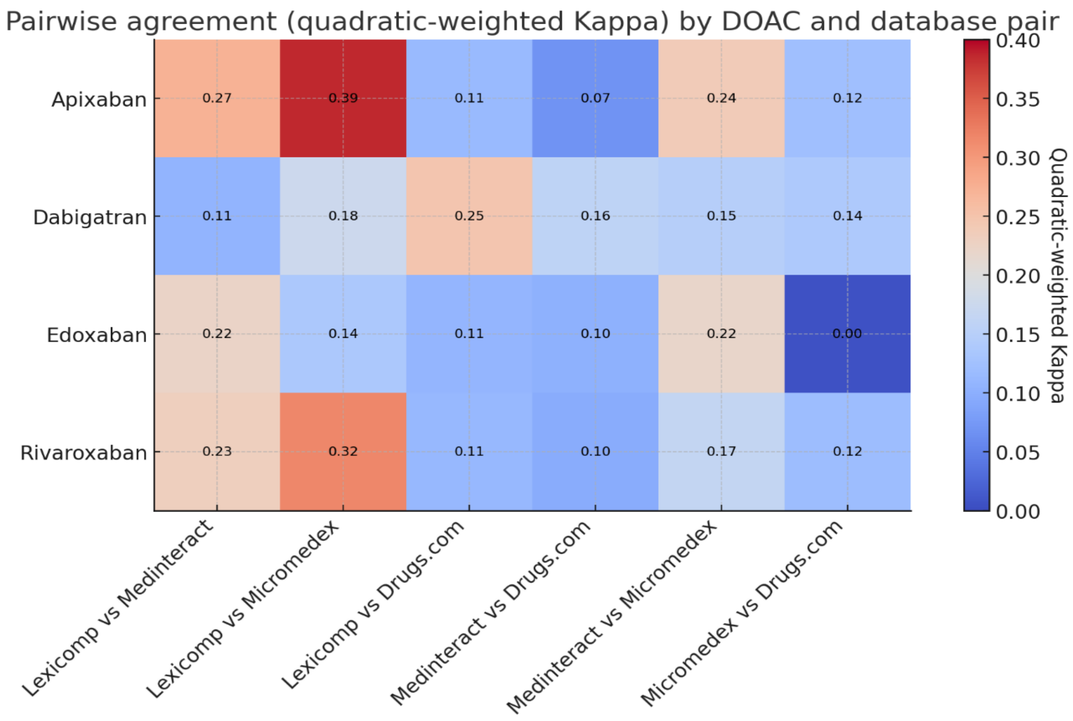
Clasificación	Lexicomp	Medinteract (SEFH)	Micromedex	Drugs.com
Grave	X, D	Grave	Contraindicated, Major	Major
Moderada	C	Moderada	Moderate	Moderate
Leve	B	Leve	Minor	Minor
No determinada	A	No determinado	-	Unknown

Agreement was assessed at two levels: global (four databases) using Gwet's AC (quadratic weights) with Fleiss' Kappa as sensitivity, and pairwise using Cohen's Kappa. Interpretation followed Altman's thresholds: ≤0.20 poor, 0.21–0.40 fair, 0.41–0.60 moderate, 0.61–0.80 good, 0.81–1.00 excellent agreement.

RESULTS

A total of 1,992 drug interactions were analysed: apixaban 531 (26.7%), dabigatran 492 (24.7%), edoxaban 411 (20.6%), rivaroxaban 558 (28.0%).





CONCLUSION AND RELEVANCE

Agreement between drug interaction databases for DOACs is consistently poor, regardless of weighting method, with minimal variation among agents. Slightly higher concordance for apixaban and rivaroxaban suggests more consistent evidence or criteria for these drugs, while dabigatran and edoxaban showed the lowest agreement. Clinicians should consult multiple sources when evaluating DOAC interactions, and efforts to standardise classification systems could enhance consistency and patient safety.