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Screening drugs for bone fracture risk: a nation-wide longitudinal study using the national SNDS claims database

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Large observational healthcare databases (LODs) offer the potential to produce inexpensive studies on patients' real-world behaviour and drug use. While carefully designed risk quantification studies using LODs are well established, adverse drug reactions (ADR) screening remains an unsolved challenge. Black-box or fully-automated approaches for screening often fail to tackle the many methodological and statistical issues that can be raised.

We propose a methodology halfway between black-box screening and carefully tailored studies, by studying many drugs at a time, without precise a priori on the shape and timing of the potential ADRs. We use this methodology to study the dynamics of antidepressants, hypnotics, neuroleptics molecules and fracture risk as a proxy for fall risk in the elderly, using data from the SNDS, a French large healthcare claims database.

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