

# Abstract

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## **Data Mining Model to Predict Fosamax Adverse Events**

Fosamax (Alendronate) is an approved drug widely prescribed for osteoporosis treatment and other bone damaging diseases. Fosamax causes a number of serious side effects on the long-term, therefore it is important to discover the hidden patterns between patients' information and Fosamax adverse events to predict the Adverse Drug Events (ADEs) for new patients. In this paper, we investigate many data mining techniques, mainly the multi-label classification methods through a framework for a Clinical Decision Support System (CDSS) to extract useful knowledge from the U.S. Food and Drug Administration (FDA) Adverse Event Reporting System (AERS) database for Fosamax, which can help healthcare providers make better decisions and reduce errors. Depending on the multi-label experimental results, BR with SVM obtained the best accuracy (76%), also BR with SVM obtained the best hamming score (77%), and CC and LC with J48 were the highest exact match (23%).