BioMed Research International

Special Issue on
Knowledge Engineering Methods and Applications in Pharmacovigilance

CALL FOR PAPERS

Drug safety is an important priority worldwide. Given the necessity to identify and track safety risks accurately and timely, the concurrent exploration of various types of data is necessary. Especially in postmarketing settings, these data span from spontaneous reports, electronic health records, the scientific literature, and even social media. The availability of this data deluge dictates the need to introduce high-throughput computational methods that will enable efficient knowledge extraction and management, compensating the underlying heterogeneity and complexity. Beyond discovery, knowledge representation, exploitation, and management are necessary for effective drug monitoring and surveillance. Knowledge engineering is the discipline that elaborates on the theories, methods, and tools for developing knowledge-intensive applications, and can largely contribute in the realization of the above objectives. Recently, and especially with the maturation of semantic web technologies and standards, various interesting applications and paradigms of knowledge engineering have been presented targeting the domain of pharmacovigilance.

Contributions to this special issue, either in the form of original research or in the form of review articles, may cover various aspects of knowledge engineering methods and applications in pharmacovigilance, illustrating the wide spectrum of potential in the domain. Major emphasis will be given to papers that illustrate the added value of knowledge engineering in the pharmacovigilance with scientific and tangible evidence.

Potential topics include, but are not limited to:

- Ontologies and knowledge bases targeting the domain of pharmacovigilance
- Semantic web and linked data applications and tools for pharmacovigilance
- Semantically-enriched big data analytics for drug safety risk monitoring and surveillance
- Knowledge-based systems for adverse drug event detection and prevention
- Natural language processing techniques driven by semantic technologies (e.g., applied in the literature and social media) in the domain of drug safety
- Integrated, knowledge-intensive platforms for drug safety
- Successful cases of applying knowledge engineering approaches in drug safety applications
- Early discovery of unknown adverse drug reactions and drug interactions

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