# Review of: "Rules Extraction, Diagnoses and Prognosis of Diabetes and its Comorbidities using Deep Learning Analytics with Semantics on Big Data"

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Thank you for sharing the PrePrint for review. This study is crucial in transforming healthcare delivery systems to address an important disease and its complications. The study also considers the patient heterogeneity viz., age, gender, medication and duration of disease as major inputs. The below are some of the observations from a medical perspective

1. Clinical Relevance: The study addresses an important issue of diabetes and its comorbidities. However, the abstract doesn't elaborate on the clinical relevance of the findings. It's crucial to clearly explain how the developed AI models can contribute to clinical practice, patient care, and improving outcomes.

2. Complexity of Diabetes Diagnosis: Diabetes Mellitus (DM) is indeed a complex condition with different forms. However, the abstract mentions the challenge of differentiating it into six forms without explaining the clinical significance of this differentiation. The study should justify why this differentiation matters and how it impacts patient care.

3. Validating against Medical Standards: The study should describe how the AI-based diagnoses and prognoses were compared to established medical standards and guidelines. Validating against medical expertise is important to ensure that the AI models are providing accurate and clinically meaningful results.

4. Collaboration with Medical Experts: Collaboration with medical professionals and domain experts is essential to ensure that the AI models are developed and evaluated with a deep understanding of clinical context and patient needs.

5. Ethical and Regulatory Considerations: Given that the study involves patient data, ethical considerations such as patient consent, data privacy, and adherence to relevant regulations to be mentioned.

6. Potential for Overdiagnosis and Overtreatment: High accuracy rates mentioned in the abstract can raise concerns about overdiagnosis (diagnosing conditions that may not actually cause harm) and overtreatment (unnecessary treatments). The study should address how these issues are mitigated.

7. Long-Term Follow-Up and Outcomes: Diabetes and its comorbidities require long-term management and monitoring. The study should discuss how the AI models account for long-term outcomes and follow-up of patients.

In summary, this study addresses an important area of research, it's can be further strengthened by aligning with medical standards and ethical considerations.