Stroke, a fatal non-communicable disease of any age, kills more people than AIDS, Tuberculosis and Malaria put together in each year. WHO estimated around 6.2 million deaths because of stroke in 2008. As the incidence, prevalence, mortality, and disability rates are increasing, overall stroke burden has increased globally. Almost 70% of patients are unaware of their mild stroke, 30% seek medical attention lately and another 30% suffer from recurrent stroke, before seeking attention. Data mining, with its several techniques for classification and regression, plays a leading role in developing an effective model of risk prediction in the context of healthcare. Even though stroke prevention is a complex medical issue, primary prevention could be feasible by using data mining classification techniques that will assess risk factors to predict the likelihood of the disease among mass people. This work is aimed at providing an analysis of different data mining classification algorithms like Naïve Bayes (NB), Decision Tree (DT), Logistic Regression(LR), Random Forest(RF), Support Vector Machine (SVM), etc. on a newly created dataset of 435 patient’s risk factors to find the algorithm with the best accuracy to propose a tool for the end users to check stroke risk prediction.