ABSTRACT
There are many visual grading systems that have been used in neuroradiology like medial temporal lobe atrophy scale, global cortical atrophy scale, posterior atrophy rating scale of parietal atrophy, Fazekas scale, thrombolysis in cerebral infarction scale, etc. All these grading systems do not have any measurable values or grades based on numerate values. Instead, these grading systems depend on a personal opinion and visual estimation. This paper focuses on the accuracy, practicality, and usability of these grading systems.

Key words: Medial temporal lobe atrophy (MTA); Global cortical atrophy scale; Posterior atrophy rating scale of parietal atrophy; White matter lesion grading system (Fazekas scale); Thrombolysis in cerebral infarction (TICI) scale

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stages 1 and 2 based on normality analysis. MTA still used by Neuroradiologists, Neurosurgeons, and Psychiatrists worldwide to evaluate AD and MCI patients which is an early stage of AD. Even though, it can’t identify AD patients in stage 1 and 2. From a logical point of view, if a grading system can’t detect stage 1 and 2 in AD patients (which are early stages of AD), how it can detect the MCP? (which is more earlier than stage 1 and 2 of AD). What is the use of a grading system that can identify AD patients in stage 3 and 4 only which is already known and confirmed as AD patient?

Another visual grading system is the global cortical atrophy scale for neurodegenerative diseases. This grading system uses terms like mild, moderate, and severe ventricle enlargement which is confusing. Ventricle enlargement can be classified based on simple linear measurements into a specific category[31]. If a grading system does not use measurable values, it will depend on different personal opinions. A good grading system will make different raters to have the same result.

As well, posterior atrophy rating scale of parietal atrophy for dementia is another case of misleading visual grading systems. This grading system uses terms like mild sulci widening, substantial gyri atrophy, marked widening or atrophy, and knife blade gyral atrophy. How someone can differentiate between a substantial or marked effect?

White matter lesion grading system or Fazekas scale is another grading system that is being used in neuroimaging. Fazekas scale is not being used in the clinical settings due to the use of words like mild, moderate, severe that are not favored by clinicians[40]. Even though, its widely used in academia and in publications[41].

The visual grading systems are many, another example is the thrombolysis in cerebral infarction (TICI) scale which classify the perfusion in stroke patients. TICI was found to have a substantial differences in application and definition[39].

All the previous grading systems have been tested in different published papers and they have been proven to be inaccurate, but still many medical professionals use these inaccurate systems to make different medical decisions which is illogical.

The medical societies like the American College of Radiology must have a role in endorsing or rejecting these systems. Any system that have been proved to be effective, practical, and accurate must be endorse. On the other hand, any system that have been proved to be inaccurate must be warn of using it until the system modified or fixed.

CONCLUSION

Any grading system should have a measurable values to categorize any disease into a specific category to understand the severity of the condition in any patient which will affect the medical decisions.

REFERENCES