

Background

- ICD-9 codes have been widely used in studies utilizing large national databases that evaluate the clinical epidemiology of encephalitis in the United States [1].
- Many studies have showed that ICD-9 codes have poor accuracy in stroke, multiple sclerosis and pulmonary fibrosis but their utility in encephalitis is unknown [2,3].

Results

- A total of 1,241 cases were identified by a discharge diagnosis of ICD-9 code as having encephalitis.
- 777 patients were collected from Memorial Hermann Health System (MHH) and 464 patients were collected from Harris Health System (HHS).
- The most common cause identified was not having a central nervous system infection in 580 (46.6%) patients.
- A total of 244 (19.6%) patients were correctly identified as having encephalitis.
- Other causes identified were nosocomial meningitis (11.9%), community-acquired bacterial meningitis (8.1%), aseptic meningitis (5.8%), fungal meningitis (5.4%), tuberculosis (2.0%) and parasitic meningitis (0.2%).

Table 1. Correct clinical diagnosis in 1,241 patients with a discharge diagnosis of encephalitis by ICD-9 codes.

Diagnosis	Number of MHH patients (%)	Number of HHS patients (%)	Total number of patients (%)
Non-CNS infection	326 (27.4)	254 (54.7)	580 (46.6)
Hospital acquired meningitis	147 (12.4)	1 (0.2)	148 (11.9)
Encephalitis	110 (9.3)	134 (28.8)	244 (19.6)
Bacterial meningitis	92 (7.7)	9 (1.9)	101 (8.1)
Aseptic meningitis	29 (2.4)	43 (9.2)	72 (5.8)
Fungal meningitis	53 (4.5)	15 (3.2)	68 (5.4)
Tuberculous meningitis	18 (1.5)	7 (1.5)	25 (2.0)
Parasitic meningitis	2 (0.2)	1 (0.2)	3 (0.2)
Total	777 (62.6)	464 (37.4)	1,241 (100)

Methods

- Retrospective study of all adults with a discharge diagnosis of encephalitis by an ICD-9 code.
- The study was performed in 17 hospitals from the Memorial Hermann Hospital and Harris Health Hospital system in the Greater Houston area from March 2010 until July 2015.
- Medical records were reviewed and a case was considered accurately classified as encephalitis if they met the definition established by the international encephalitis consortium.

Conclusions

- ICD-9 codes have poor reliability in identifying patients with encephalitis questioning the accuracy of large nationwide studies that utilize them to identify patients.
- The accuracy ICD-9 codes may be dependent upon the staff and institution.

References

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