Background: Dementia patients at the wheel is an issue directly related to public safety, but there is no established medical gold standard for evaluating their driving aptitude. To the best of our knowledge, there have been few reports regarding driving behaviour in patients with frontotemporal lobar degeneration (FTLD) and its relation to traffic accidents. The aim of this study was to compare the characteristics of driving behaviours and traffic accident history between patients with FTLD and Alzheimer’s disease (AD).

Methods: The subjects were 28 FTLD and 67 AD patients who visited the Department of Psychiatry, Kochi Medical School Hospital. The clinical subtype of the FTLD group was frontotemporal degeneration in 13 patients, semantic dementia in 13, and progressive non-fluent aphasia in 2. We conducted semistructured interviews with their families and caregivers about traffic accident history and changes in patient’s driving behaviors after dementia onset and compared the findings between the two groups. The questionnaire included items about whether the patient did the following: (i) forgot the destination; (ii) failed to get the car in/out of the garage; (iii) had difficulty judging inter-vehicle distances; (iv) ignored road signs and traffic signals; (v) was distracted (e.g. took their eyes off the road); and (vi) showed overall changes in driving behaviour.

Results: Overall changes in driving behaviors were reported in 89% (25/28) and 76% (51/67) of the FTLD and AD patients, respectively ($p = 0.17$). In the FTLD group, difficulty in judging inter-vehicle distances, ignoring road signs and traffic signals, and distraction were reported in 50%, 61%, and 50% (14, 17, and 14 of 28) patients, respectively, and 75% (21/28) patients had caused a traffic accident after dementia onset. The risk of causing an accident was higher in the FTLD group than the AD group [odds ratio (OR) = 10.4, 95% confidence interval (CI) = 3.7–29.1]. In addition, the mean duration between dementia onset and a traffic accident was 1.35 years in the FTLD group compared with 3.0 years in the AD group ($p < 0.01$).

Discussion: Our results indicated that patients with FTLD were more likely to show dangerous driving behaviours than those with AD, and the risk of causing a traffic accident was much higher in the FTLD group than in the AD group. Impaired driving ability in FTLD appears more likely to relate to personality and behavioural changes, such as an increase in aggressiveness, impulsivity, and disinhibition. Therefore, it may be necessary to pay careful attention to the driving behaviours of patients with FTLD and to instruct families to consider the accident risk from a very early stage. FTLD patients should cease driving as soon as possible after FTLD has been diagnosed.