FUNCTIONAL LOSS ACROSS STAGES OF ALZHEIMER'S

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DISCLOSURES

- W. Tsong is a former employee of Eisai, Inc. which is a pharmaceutical company that currently has investigational compounds in Alzheimer's disease trials.

- E. Jones, J. Pike, and D. Bluff are employees of Adelphi Real World, a consulting company that was hired by Eisai to perform analyses on their Adelphi Disease Programme database.

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INTRODUCTION

- Alzheimer's disease (AD) is the most prevalent dementia, and is associated with cognitive, behavioural, and functional symptoms.[1]

- A relationship between functional loss and worsening disease severity has been demonstrated, with this functional decline suggesting a loss of independency in day to day life for patients suffering from AD. [1] [2]

- This noticeable decline in a patient's life, has brought about calls for a cultural shift in diagnosing AD at an earlier stage and in turn earlier care for the patient. [3]

OBJECTIVE

The objective of this research is to describe the loss of

functioning in mild cognitive impairment (MCI) patients

through to severe Alzheimer's disease (AD) dementia patients

DATA SOURCE

- Data were taken from the 2015/16 Adelphi Real World Dementia Disease Specific Programme (DSP), a multi-national, cross-sectional survey of physicians and their consulting patients with Cognitive Impairment which was conducted in France, Germany, Italy, Spain, UK, and USA.

- Primary Care Physicians (PCPs), geriatricians, neurologists, psycho-geriatricians, psychiatrists and neuro-psychiatrists were included in the DSP.

- Inclusion criteria: age 50 or older with symptoms of mild cognitive impairment (MCI) or physician-diagnosed Alzheimer's disease dementia (mild to severe).

- Exclusion Criteria: vascular only cause and traumatic brain injury

- Physicians were requested to complete patient record forms (PRF) for the next 10 consecutively consulting patients with Cognitive Impairment who met the criteria.

- Information in the PRF included patient demographics, symptoms, diagnosis, tests, scans, physician reported severity.
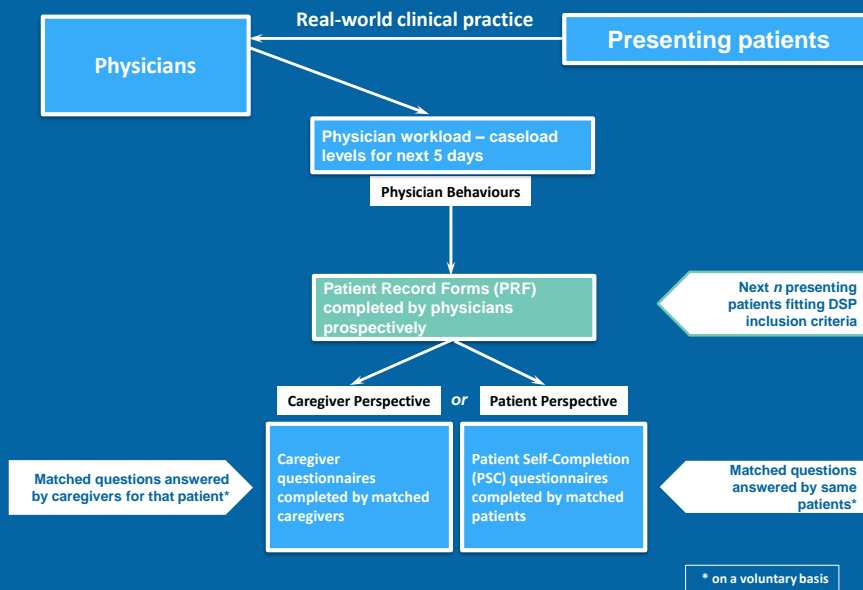
A holistic approach taking into account all stakeholders within the patient journey

A proven and citable approach [4]

Anderson P. et al.
Real-world physician and patient behaviour across countries: Disease-Specific Programmes – a means to understand
CMRO 2008; 24 (11): 3063-72

METHODOLOGY

Real-world clinical practice

Physicians ← **Presenting patients**

Physician workload – caseload levels for next 5 days

Physician Behaviours

Patient Record Forms (PRF) completed by physicians prospectively

Next *n* presenting patients fitting DSP inclusion criteria

Caregiver Perspective *or* Patient Perspective

Matched questions answered by caregivers for that patient* → Caregiver questionnaires completed by matched caregivers

Patient Self-Completion (PSC) questionnaires completed by matched patients ← Matched questions answered by same patients*

* on a voluntary basis

SAMPLE

	Overall (n=6996)	MCI (n=1479)	Mild (n=2108)	Moderate (n=2383)	Severe (n=1026)
France	1098	234	310	342	212
Germany	1100	250	397	349	104
Italy	1093	220	250	406	217
Spain	1090	177	327	408	178
UK	1124	200	349	395	180
USA	1491	398	475	483	135

STATISTICAL METHODS

- Descriptive analyses were performed on data provided by physicians. Means and standard deviations (SDs) were calculated.

- Logistic regression analysis was used to examine outcomes, adjusting for confounders.

- Stepwise variable selection was utilised (threshold $p < 0.05$) on a set of confounders chosen after examining the association of the potential confounder with severity and with each outcome.

- Potential confounders were age, gender, country, BMI, Charlson Comorbidity Index, and concomitant conditions.

- Adjusted means were reported to demonstrate the association of severity with outcome.

RESULTS

- Data were reported for a population of 6996 patients (1479 MCI, 2108 mild AD, 2383 moderate, 1026 severe).
- Physician-completed records for a total 6,996 patients included in this analysis, 79% from EU5, 21% from USA

Table 1 – Patient Demographics
- Median age was 78.0, 54.2% were female and the majority (81.6%) were currently retired and white/caucasian (87.4%). 28.5% had a family history of Alzheimer's. 15.8% currently smoke and the mean BMI score was 25.9.

Figure 1 – Stepwise Regression Results –
Symptom experience by severity of Alzheimer's disease
- Across the functional symptoms reported there is a consistent trend in the most commonly experienced symptoms, regardless of severity
- There is a noticeable step up in the presence of functional symptoms experienced by patients in the moderate to severe stages of AD

PATIENT DEMOGRAPHICS

Table 1. Patient Demographics					
	Overall (n=6996)	MCI (n=1479)	Mild (n=2108)	Moderate (n=2383)	Severe (n=1026)
Age (years)					
Median (25th – 75th percentile)	78.0 (38.0-90.0)	71.0 (38.0-90.0)	76.0 (39.0-90.0)	80.0 (43.0-90.0)	83.0 (45.0-90.0)
Female, n (%)	3788 (54.2)	736 (49.9)	1090 (51.8)	1327 (55.7)	635 (62.0)
BMI score, mean (SD)	25.9 (4.5)	26.3 (4.4)	26.3 (4.2)	26.0 (4.5)	24.7 (4.7)
Employment status, n (%)					
Working full/part time	316 (4.6)	226 (15.5)	61 (2.9)	23 (1.0)	6 (0.6)
Retired	5638 (81.6)	1018 (69.9)	1745 (83.7)	2002 (84.9)	873 (86.3)
Other	995 (14.4)	219 (15.0)	289 (13.9)	347 (14.7)	140 (13.8)
Family history of Alzheimer's, n (%)	1336 (28.5)	316 (28.9)	411 (28.3)	407 (26.3)	202 (34.1)
Smoker, n (%)	987 (15.8)	304 (22.8)	316 (16.8)	285 (13.4)	82 (9.0)
White/Caucasian, n (%)	6078 (87.4)	1278 (86.9)	1823 (87.0)	2086 (88.0)	891 (87.5)

STEPWISE REGRESSION RESULTS

Symptoms and their severity were reported for 6996 patients (1479 MCI, 2108 mild AD, 2383 moderate AD, 1026 severe AD).

Figure 1

Symptom experience by severity of Alzheimer's disease
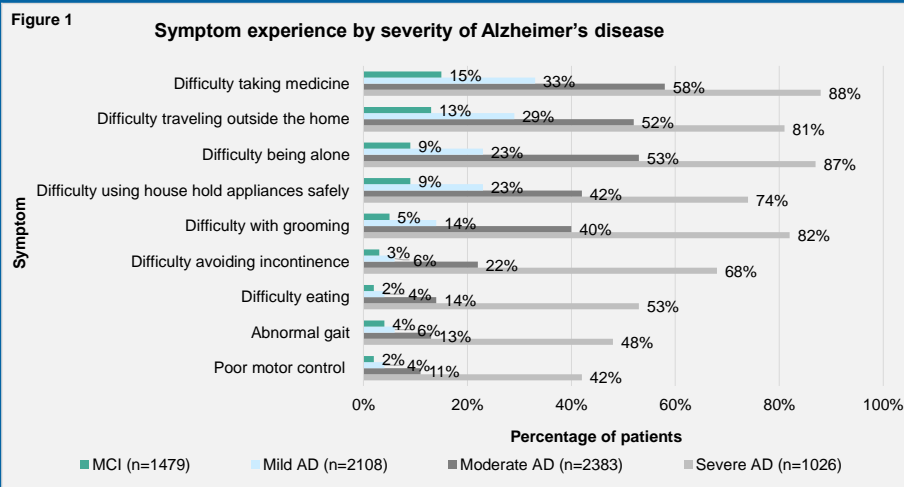
The largest increases (29%-46%) in functional loss
between stages of disease occurred between moderate to severe AD dementia.

CONCLUSIONS

- The results indicate that of the functional loss surveyed, most of the loss occurs predominantly and precipitously in the latter stages of disease.

- This would support targeting the earlier stages of disease to preserve functioning should a disease modifying agent be successful.

LIMITATIONS

- Pseudo-random, rather than a truly random sample

- This methodology relies on the accurate reporting of data

- Cross-sectional survey rather than a longitudinal survey

- Missing data are also to be expected, for example due to imperfect or incomplete physician knowledge of patients' medical history and recall bias

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