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Ethnic disparities in medication persistence in type 2 diabetes: Non-whites have reduced persistence

Andrew McGovern, William Hinton, Zayd Tippu, Simon de Lusignan



Presenter Disclosure Information

Dr Andrew McGovern

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Background

- Previous studies in the USA have demonstrated that people from ethnic minorities have reduced medication adherence/persistence.^{1,2}
- Difficult to control for health care costs and access to healthcare in the USA.
- Researchers have suggested that these are potential barriers to medication adherence/persistence in these groups.^{3,4}

1. Egede, E., et al., (2011). *Annals of Pharmacotherapy*. **45**(2): p. 169-179.
2. Shenolikar, R.A., et al. (2006). *Journal of the National Medical Association*. **98**(7): p. 1071-1077.
3. Bezie, Y., et al. (2006). *Diabetes and Metabolism*, 2006. **32**(6): p. 611-616.
4. Guénette, L., et al. (2013). *Diabetes and metabolism*, 2013. **39**(3): p. 250.

Study Aim and Design

Do ethnic disparities in medication persistence exist in a healthcare system which is free at the point of care?

Retrospective cohort study on a large community based population in England

Data Collection

- Study database: RCGP RSC
 - 127 primary care practices across England
 - Anonymised records for all patients
 - 11 years of data (2004-2015)
- Diabetes population: 58,717 adults with T2DM
 - Identified using clinical codes (P4P)

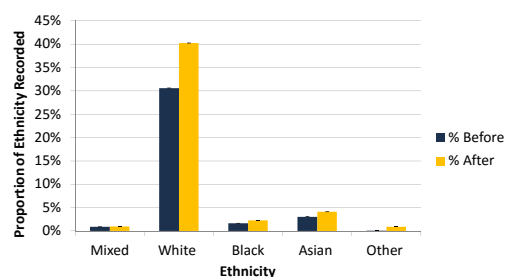
Ethnicity identification

Informatics ontology (undergoing peer review)

- Ethnicity codes (previously included in P4P)
- Externally validated surrogate codes
 - Examples:
 - 13I1. 'Main language spoken Bengali'
 - 94.3% PPV for Asian ethnicity
 - 9NU6. 'Interpreter needed-Bengali'
 - 93.9% PPV for Asian ethnicity

Ethnicity identification

- Improved ethnicity identification:



Method

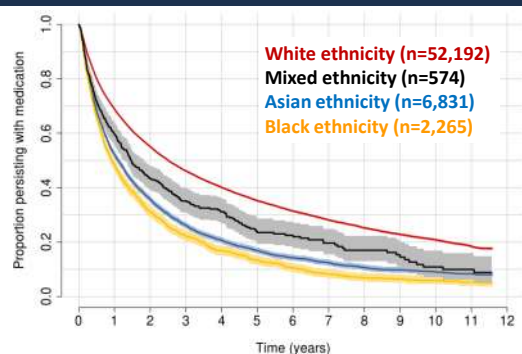
- All currently used non-insulin diabetes medications were included for analysis of persistence:
 - metformin, sulphonylureas, etc
- Non persistence was defined as a medication gap of ≥ 90 days
- Cox proportional hazards model adjusting for:
 - Age, socioeconomic deprivation, alcohol and smoking use, HbA1c, duration of diabetes, presence of complications and comorbidities, number of concurrent and previous medications.

Results

Crude median persistence:

- White people (52,192 medications): **2.53 years (2.49-2.58)**
- Asian people (6,831 medications): **1.11 years (1.05-1.17)**
- Black people (2,265 medications): **0.93 years (0.87-1.03)**
- Mixed ethnicities (574 medications): **1.47 years (1.26-1.80)**
- Other ethnicities (413 medications): **1.37 years (1.23-1.52)**

Results



Results

Adjusted hazard ratio for non-persistence:

- White: comparison group
- Asian: **HR 1.61 (1.05-1.66; $p < 0.001$)**
- Black: **HR 1.82 (1.73-1.92; $p < 0.001$)**
- Mixed: **HR 1.37 (1.23-1.52; $p < 0.001$)**
- Other: **HR 1.65 (1.46-1.86; $p < 0.001$)**

Strengths and limitations

Limitations

- Reasons for association not possible to explore
- Proportion of people with no recorded ethnicity

Strengths

- UK dataset minimises the impact of disparity caused by cost and access to healthcare
- Large population size
- Real world data

Conclusions

In people with type 2 diabetes, non-white ethnicity is associated with reduced medication persistence.

Further work is needed to identify the factors underlying these disparities.

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