OP32 ASSOCIATION BETWEEN OPTIMAL GUIDELINE-INDICATED CARE AND SURVIVAL IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND LONG-TERM CONDITIONS: A POPULATION BASED COHORT STUDY

[1]JA Ellis*, [1,2]O Bebb, [1]TB Dondo, [1]M Hall, [1,2]CP Gale. [1]*Leeds Institute of Cardiovascular and Metabolic Medicine, University of Leeds, Leeds, UK*; [2]*York Teaching Hospital, NHS Foundation Trust, York, UK*

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Background Acute myocardial infarction (AMI) remains the largest cause of hospitalisation and death in Europe. Long term conditions (LTC) are common in people with AMI and patients with LTCs also experience lower survival. The effect of LTCs on treatment receipt has not been investigated.

Methods Myocardial Ischaemia National Audit Project (MINAP) data for 6 93 388 patients with ST-elevation myocardial infarction (STEMI) and non-ST-elevation myocardial infarction (NSTEMI) were used to investigate associations between LTCs (including diabetes, chronic heart failure, chronic renal failure, COPD, peripheral vascular disease, and cerebrovascular disease) and treatment receipt. Poisson and binomial models were fitted to determine the association between LTCs and receipt of care, with treatment receipt as a count and a binary optimal care vs. sub-optimal care variable (receipt of all eligible care components vs. missing one or more) as the outcome and individual as well as cumulative LTCs as exposures. Model adjustments were informed by directed acyclic graphs. Flexible parametric survival models were fitted to investigate the interaction of LTCs and optimal care, and the impact on survival.

Results Receipt of optimal care was 11.3% (n=78,376), with patients receiving on average 67% of all care opportunities (Mean 0.67, SD 0.23; Median 0.7, IQR 0.5–0.86). In those with a LTC (n=257,929), 11% (n=28,357) received optimal care. Patients with ≥one LTC received 2.7% fewer treatments compared with no LTC (IRR 0.97, 95% CI 0.97–0.98); larger differences of 7.3% and 6.1% were evident, respectively, in patients with chronic heart failure (0.93, 0.92–0.93) and chronic renal failure (0.94, 0.93–0.94). The odds of receiving suboptimal care were not significantly different in patients with ≥one LTC than those with no LTC (OR 1.01, 95% CI 0.89,1.13), however the odds of receiving optimal care was significantly lower in chronic heart failure (0.53, 0.46–0.61) and chronic renal failure (0.52, 0.44–0.62) compared to patients without these conditions. There were 2 04 667 deaths over a mean follow-up time of 2.25 years. The hazard of death in optimally treated patients with ≥one LTC was double that of those without LTCs (HR 2.18, 95% CI 2.09–2.27) and 2.5-fold in sub-optimally treated patients with ≥one LTC compared with no LTCs (2.60, 2.52–2.69).

Conclusion Patients with LTCs received fewer treatments and were less likely to receive optimal care than those without. Treatment receipt was lowest in chronic heart failure and chronic renal failure. The worst survival was observed in patients with ≥one LTC receiving sub-optimal care.

Screening

OP33 SYMPTOMATIC VS PRE-SYMPTOMATIC TREATMENT OF TYROSINEMIA TYPE 1 WITH NITISINONE: A SYSTEMATIC REVIEW

[1]C Stinton*, [1]J Geppert, [1]K Freeman, [1]A Clarke, [1]H Fraser, [2]S Johnson, [1]P Sutcliffe, [1]S Taylor-Phillips. [1]*Warwick Medical School, University of Warwick, Coventry, UK*; [2]*Warwick Library, University of Warwick, Coventry, UK*

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Background Tyrosinemia type 1 is a rare autosomal recessive disorder of amino acid metabolism, affecting approximately 1 in 1 00 000 people. Without treatment, death is common in childhood. Treatment with nitisinone is associated with reductions in mortality and morbidity; some studies suggest better outcomes when treatment is initiated before the symptoms of the disorder present. An apparent benefit of earlier versus later treatment has been used to support the implementation of newborn screening for Tyrosinemia type 1, but these studies have not been synthesised or quality appraised. We conducted a systematic review to examine if individuals treated following screen detection of the disorder had better outcomes than those treated following symptomatic detection.

Methods Standard systematic review methods were used. Embase, Medline, Pre-Medline, and Web of Science were searched. Participants were individuals with Tyrosinemia type 1. We compared people who received nitisinone following screen detection of the disorder (early treatment) with those who received nitisinone after symptomatic presentation (late treatment). Any reported outcomes were considered. Two reviewers independently screened and assessed records, and conducted quality appraisal (using the Quality Assessment Tool for Quantitative Studies). Data extraction was carried out by one reviewer, and checked by another. A narrative synthesis of results was carried out. Post-hoc comparisons were conducted to address confounding factors and applicability concerns.

Results The titles/abstracts of 470 unique records were examined, and 50 full texts assessed. Seven articles were included in the review. Study sample sizes ranged from 17 to 148. Methodological quality of the studies was moderate to weak. There was evidence of associations between early treatment with nitisinone and lower rates of death, liver disease and transplantations, and renal dysfunction. However, posthoc analyses suggested an association between earlier treatment and lower rates of liver transplantation but not mortality (analysis 1) or no differences in outcomes for those treated earlier versus later (analyses 2 and 3).

Discussion Evidence from observational studies suggests that treatment with nitisinone initiated during the pre-symptomatic period may be beneficial to people with Tyrosinemia type 1. However, this is subject to bias and applicability concern; the apparent benefits of early treatment may not be present when these issues are addressed. There are several challenges inherent in rare diseases research, including small and