NHS
Greater Glasgow and Clyde

Diabetes and opiate replacement therapy (ORT). A retrospective cohort study of health care usage and clinical outcomes.

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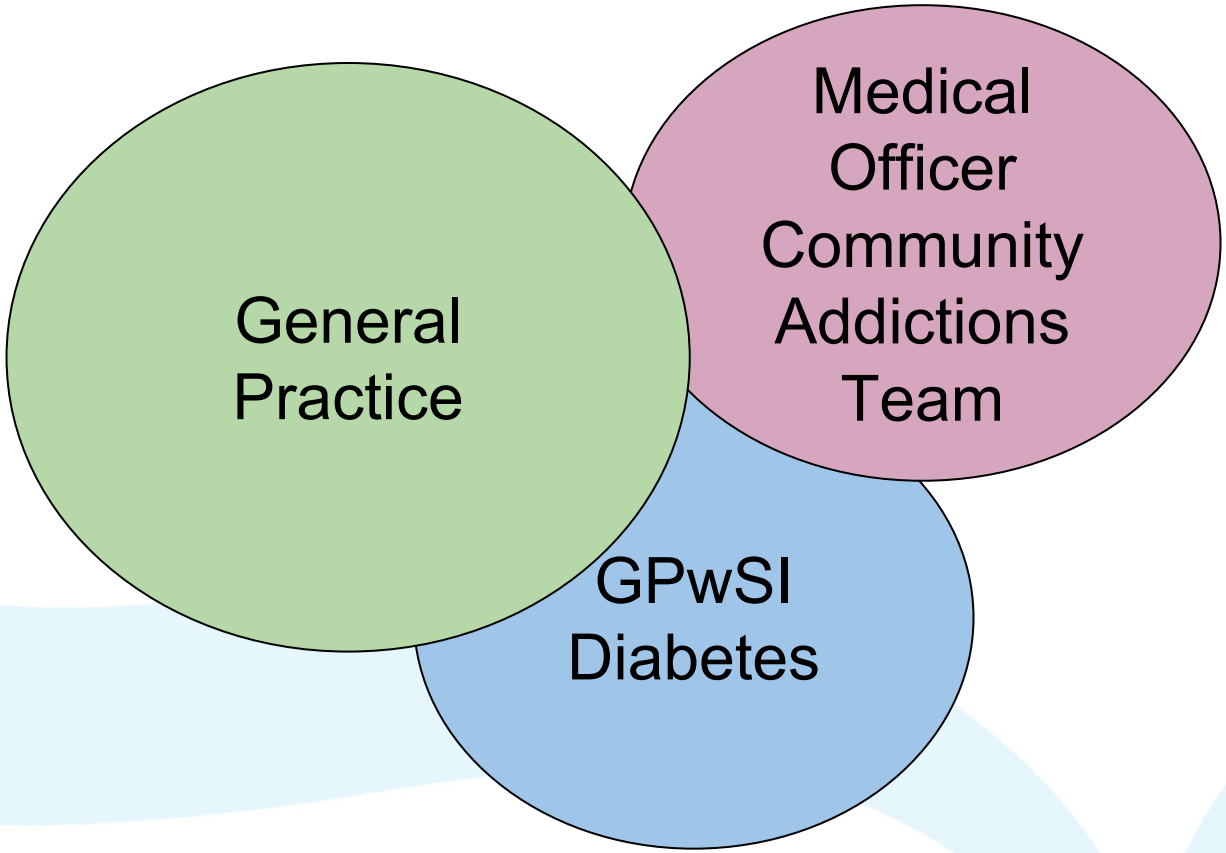
Background


General Practice
Medical Officer Community Addictions Team
GPwSI Diabetes

Patient story

- Male early thirties
- Type 1 diabetes, on BD mix insulin
- On buprenorphine
- Depot for Mental Health Problems
  - Plus gapapentin/nitrazepam from GP
- CPN

Hypothesis

- People with problem opiate use and diabetes will have **poorer engagement and worse outcomes** when compared to people with diabetes but no evidence of problem opiate use.

- Literature review:
  - Looking specifically at diabetes with problem opiate use found 0 papers.
    - Evidence for less engagement with chronic disease management (mostly on HIV/Hepatitis/Mental health)

Methods: Outcomes

Primary outcome (Engagement)	•Engagement (diabetes clinic and retinopathy screening): • Rate of scheduled appointments made; • Rate of non-attendance. •HbA1c measurement rates.
Secondary outcomes (Clinical)	•Unscheduled care attendances; •Time spent in hospital (days/year); •HbA1c levels; •All-cause mortality analysis; •Cause of death.

Ethics and Data Access

- NHS GGC Safe Haven
  - *"A Safe Haven, in terms of NHS data, is a secure physical location and agreed set of administrative arrangements that are in place within the organisation to ensure confidential personal information is communicated safely and securely.*
    - http://www.nhsggc.org.uk/about-us/professional-support-sites/nhsggc-safe-haven/about-the-safe-haven/
  - Research Ethics Committee & Caldicott pre-approval to hold identifiable NHS GGC data.
  - Local Privacy Advisory Committee
  - Anonymised dataset available to researchers linked to requested databases e.g inpatient data, death data.

Statistical Analysis

- ‘R’ (www.r-project.org)
- Mann Whitney U tests (except mortality)
- Mortality
  - Proportional hazards regression model comparing the two cohorts (adjusted for age and diabetes duration)
  - Hazard ratio calculated
  - Deaths were grouped according to cause of death.

Study population

- ORT Cohort:
  - Received a prescription for ORT in NHS GGC between July 2011-July 16;
  - Aged 18 or over;
  - Diagnosis of diabetes as evidenced by presence in national SCI Diabetes database
- Control Cohort:
  - Matched controls from national SCI Diabetes Database.

Baseline demographics

	ORT cohort (n=388)	Control cohort (n=388)
Male gender, n (%)	248 (64)	248 (64)
Age at initial time-point (years)		
Mean (SD)	41.5 (7.5)	41.6 (7.5)
Median (Range, min-max)	41.0 (22.0 -69.7)	41.0 (22.1-69.2)

Diabetes Secondary Care Clinic Appointments:
Scheduled and DNA Rates

	ORT cohort (n=388)	Control (n=388)	P value
Appointments made (rate/year) Median (IQR)	0.00 (0.00-1.13)	0.00 (0.00-0.60)	<0.01
Proportion not attended Median (IQR)	0.53 (0.33-0.83)	0.17 (0.00-0.50)	<0.001

Retinal Screening Appointments:
Scheduled & DNA Rates

	ORT cohort (n=388)	Control (n=388)	P value
Screening appointments made (rate/year) Median (IQR)	2.00 (1.00-2.20)	2.00 (1.60-2.40)	<0.001
Proportion of appointments not attended Median (IQR)	0.33 (0.00-0.80)	0.00 (0.00-0.20)	<0.001

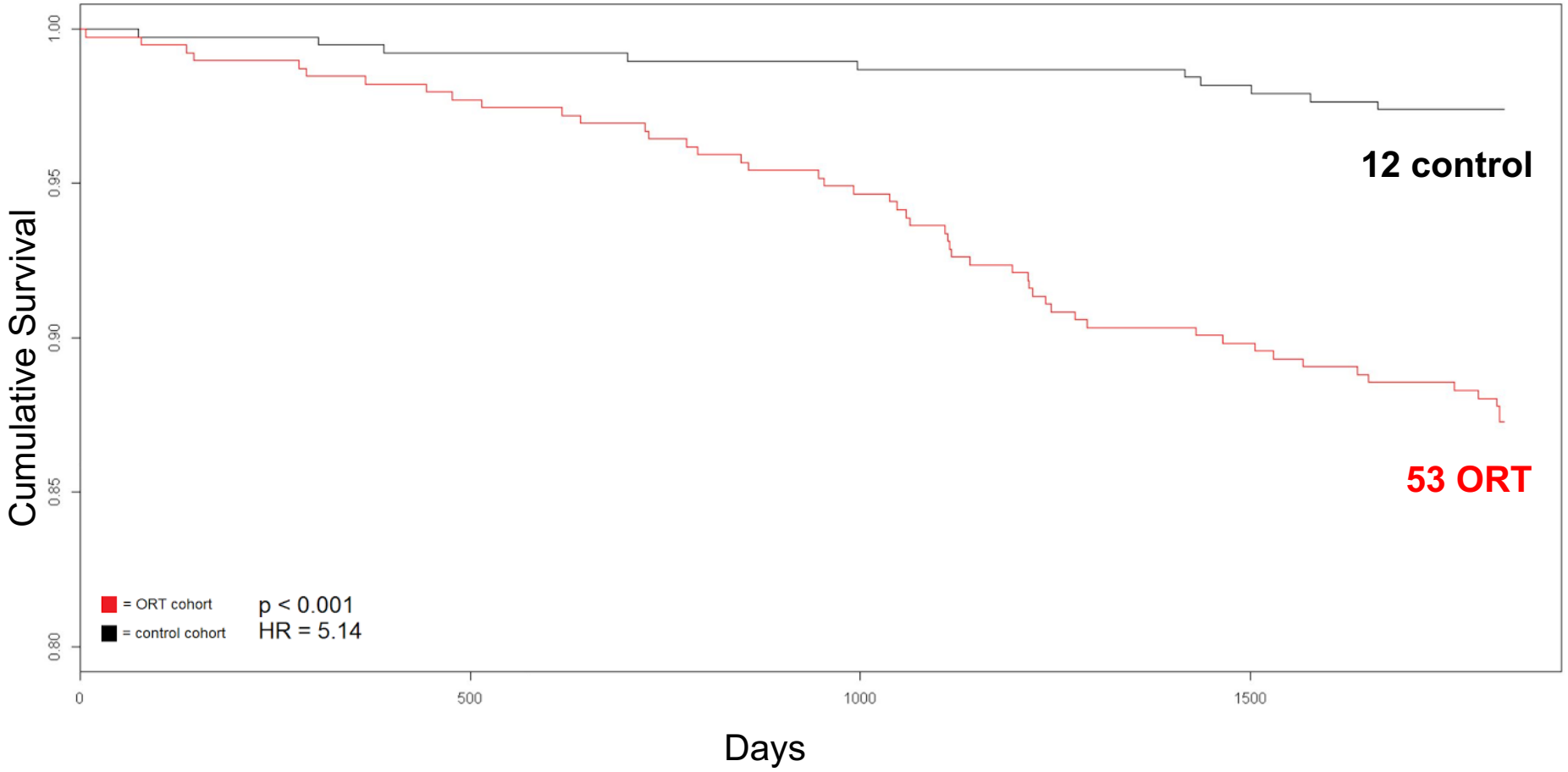
HBA1C

	ORT cohort (n=388)	Control (n=388)	P value
Number of HbA1c measures (rate/year) Median (IQR)	1.20 (0.40-2.00)	1.60 (0.80-2.50)	<0.001
Last HbA1c prior to 1/1/16 (mmol/mol) Median (IQR)	62.4 (43.0-91.4)	61.8 (48.1-84.0)	0.47

ED visits/Admissions

	ORT cohort (n=388)	Control (n=388)	P value
Unscheduled attendance at hospital (rate/year) Median (IQR)	0.60 (0.00-1.64)	0.00 (0.00-0.52)	<0.001
Time spent in hospital (days/year) Median (IQR)	0.60 (0.00-3.60)	0.00 (0.00-0.40)	<0.001

Five year all cause mortality



Cause of death data

	ORT (n = 53)	% cohort deaths		Control (n = 12)	% cohort deaths
Drug related	13	25%		0	0
Diabetes-related	8	15%		1	8%
Liver/pancreatitis	6	11%		1	8%
Cardiovascular	4	8%		4	33%
Cancer	3	6%		3	25%
COPD/pneumonia	3	6%		1	8%
Suicide	3	6%		0	0
Infection	2	4%		0	0
Other	1	2%		0	0
Unknown	10	19%		2	17%

ORT Cohort Cause of death

	ORT (n = 53)	% cohort deaths
Drug related	**13**	**25%**
- accidental overdose	6	
- mental behaviour due to dependent drug use	6	
- pneumonitis	1	
Diabetes-related	**8**	**15%**
- DKA	7	
- Diabetes without complication (? hypo)		
Liver/pancreatitis	**6**	**11%**
- alcoholic liver disease	2	
- acute pancreatitis	2	
- hepatitis C	1	
- other cause of cirrhosis	1	

Study highlights

- Likely underdiagnosis of type 2 diabetes
- Higher level of non-attendance for clinic attendance
- Increased use of ED and more time spent in hospital
- Significantly higher mortality - over and above that expected for a problem drug use population.
- **Number of AVOIDABLE diabetes related deaths.**

Real life implications

- Support patients to attend !
- Facilitate a remote diabetes review:
  - Urine for ACR/ Bloods for UE/HBA1C
  - Consider other autoimmune conditions
  - Ask about feet (pain and numbness)
  - Ask about insulin injection sites
- Liaise with your local diabetes teams (phone/email)
  - community diabetes nurses may be a resource

Unanswered questions:

- Is buprenorphine better than methadone?
- Should significant physical conditions be a trigger for transfer to shared care???

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