Wide variation in the per patient cost of prescribing of diabetes drugs for type 2 diabetes in primary care is not correlated with metabolic outcome

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Background

The prevalence of diabetes especially type 2 is increasing all over the world. Diabetes prescribing changed from older drugs to newer expensive drugs causing economic burden to health systems.

Aims

To identify the variation in prescription patterns and the cost of diabetes treatment across primary care practices in Cardiff, UK and to compare expenditure versus outcome.

Methods

Data on 64 primary care institutions (515581 patients) in Cardiff and Vale University Health Board area were obtained from Quality and Outcome Framework Wales, 2018 data base. Expenditure and volume of commonly used diabetes drugs were obtained from annually published government data base (CASPA). Cost per patient for diabetes medication, prevalence of diabetes, prescription patterns and metabolic outcome (percentage of patients with HbA1c < 58mmol/mol) were assessed and compared between nine GP surgeries.

Results

Out of all patients, 4.94% (n=25492) were diagnosed with diabetes. Rate of having HbA1c <58mmol/mol was 63.17% (range 43%-76%). Biguanides usage was 43.6% of total diabetes drug volume but Sulphonylurea was 15.2%. The usage of other drugs included DPP4 inhibitors (12.2%), SGLT2 inhibitors (8.8%), GLP1 agonists (3.0%) and Insulin (14.08%). The average per patient cost for diabetes drugs was £302.93, with a wide range of £207.00-£475.28. GP surgeries which reported lower expenditures used more Biguanides and Sulphonylureas than the newer drugs. However, no relationship was seen between drugs used, cost per patient and the metabolic outcome, measured by HbA1c.

Fig 1: Distribution of outcome Vs Per Patient cost usage among GP surgeries with % volume of drugs used

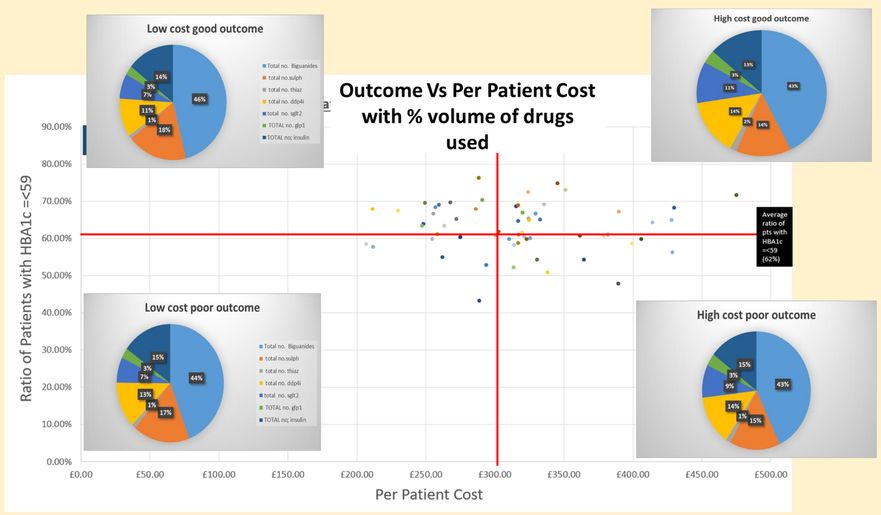
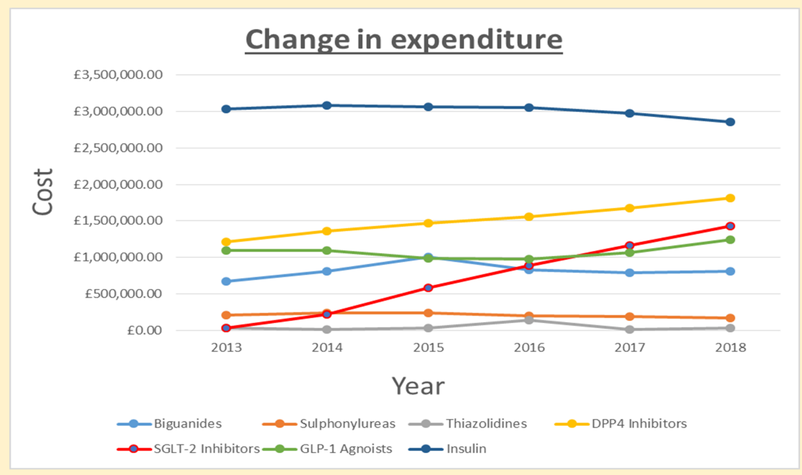


Table 1: Distribution each drug category by the % volume of used

Category of diabtes medication	% Volume used in 2018		
	Cardiff average (%)	Lowest (%)	Highest (%)
% Biguanides	43.68	28.5	53.2
% Sulphonylurea	15.29	6.7	24.5
% Thiazolinedione	1.43	0.4	7.0
% DPP4 Inhibitors	12.2	5.5	19.0
% GLP 1 agonist	3.1	0.9	7.0
% SGLT 2 inhibitors	8.9	3.5	28.5
% Insulin	14.08	7.0	28

FIG 2: Change in expenditure for diabetes drugs 2013-2018



Conclusions

There is a wide variation in prescribing patterns for patients with diabetes and annual per patient cost for diabetes among community GP surgeries which does not relate to improved metabolic outcomes. Substantial savings in prescribing costs for diabetes drugs may be possible by retention of use of less expensive drugs in more patients without compromising metabolic outcomes