Weight Loss & Weight Management in Primary Care in Adults with Type 2 Diabetes

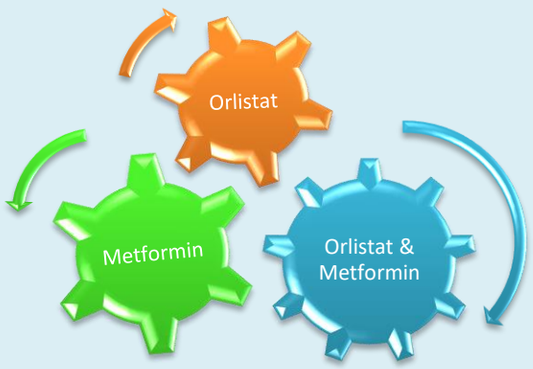
Shraboni Ghosal, Professor Kelvin Jordan, Dr John Edwards
School of Medicine, Keele University, Staffordshire, ST5 5BG, UK

Background

Diabetes is a chronic, metabolic disorder (WHO, 2019). It is the fastest growing health crisis, increases risk of complications, e.g. stroke. Type 2 Diabetes (T2D) is the most common and is a major public health issue. Obesity is the main modifiable risk factor (PHE, 2017). Lifestyle Interventions are the best for weight loss. Pharmacotherapy is the next option for some. Studies have shown that Orlistat can cause 5-10kg weight loss over 12 months but metformin on weight loss has some conflicting results. There are no recent weight loss studies with the combined medications in T2D & prediabetes in primary care – hence the need for this study.

Objectives

- To describe weight management using orlistat and/or metformin in T2D and prediabetes in UK primary care.
- To summarise current evidence of orlistat and metformin on weight loss in T2D and prediabetes.
- To investigate if orlistat and metformin are associated with weight loss , blood sugar and blood pressure.
- To determine if combined orlistat and metformin are associated with reduced incidence of T2D compared to metformin alone.



Phase 1: Two Systematic Reviews

Systematic Review 1

Aims
- To investigate orlistat's efficacy on weight loss, BMI, blood sugar, Cardiovascular (CV) risk factors and quality of life in T2D & prediabetes.

Method
- Systematic review & Meta analysis

Findings
- 25 studies: randomized controlled trials (RCTs)
- Orlistat reduced weight, BMI, blood sugar, BP, CV events.
- Weight loss of 5-10% significantly reduces CV risk factors in T2D.

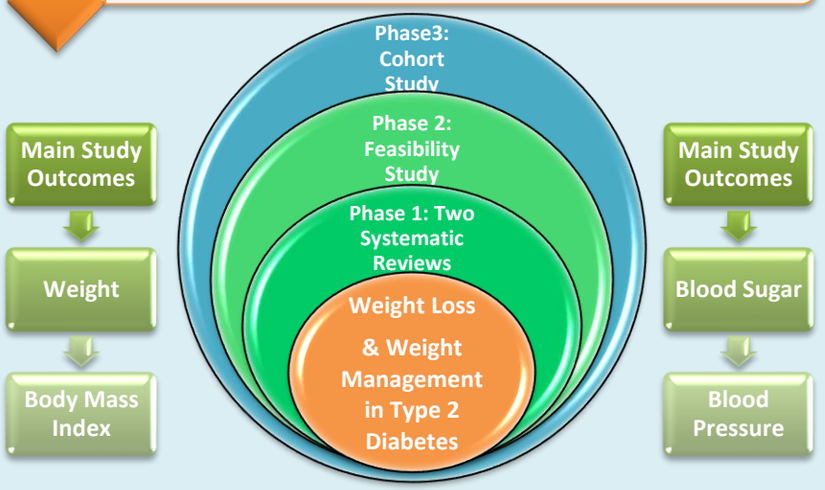


Figure 1: Study Outline

Systematic Review 2

Aims
- To investigate the efficacy of metformin & lifestyle interventions on weight loss in T2D & prediabetes; Investigate barriers to weight management; care by Healthcare professionals (HCPs).

Method
- Systematic review: mixed methods.

Findings
- 32 studies: all types.
- Metformin delayed/prevented T2D; may induce modest weight loss.
- HCPs reported a lack of resources, patient knowledge; health education.

Phase 2: Feasibility Study

- **Consultations in Primary Care Archive:** Anonymized, regional, Primary care database with data of about 90,000 patients from 9 General Practices in N. Staffordshire (Jordan et al, 2013).
- **Study Design:** Retrospective cohort study.
- **Population:** Adults with T2D and/or prediabetes.
- **Exposure:** Orlistat and/or metformin.

Phase 2 Results

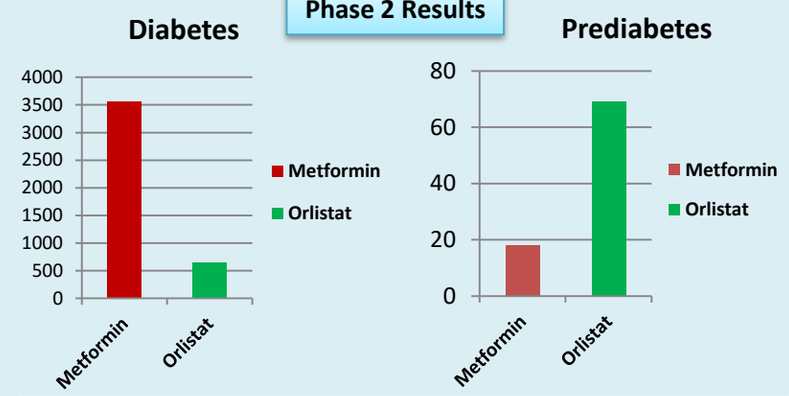


Figure 2: Diabetes Type 2 & Prediabetes – Metformin & Orlistat

Phase 3: Main Cohort Study

- **Clinical Practice Research Datalink**: Anonymized, UK, primary care database of >19 million patients in England (Wolf et al, 2019).
- **Objectives:** To investigate if orlistat and metformin are associated with weight loss and weight management, blood sugar & BP in T2D.
- **Study Design:** Retrospective cohort study.
- **Population:** Adults with T2D and/or prediabetes.
- **Exposure:** Orlistat and/or metformin.
- **Outcomes:** Weight, BMI, Blood sugar, BP.

What is already known

- Orlistat can cause weight loss and improve blood sugar levels.
- Can be used for the treatment of obesity alongside metformin.

What this study will add

- May facilitate better weight management, improve weight loss and clinical outcomes in T2D and prediabetes - can also lead to diabetes remission.
- May help to develop better guidelines; better decision making.

References

Jordan, K.P. et al. (2014). International comparisons of the consultation prevalence of musculoskeletal conditions using population-based healthcare data from England and Sweden. *Annals of the Rheumatic Diseases, 73,* 212-218.
Public Health England (PHE) (2014). *Adult obesity and type 2 diabetes.*
Wolf, A. et al.. (2019). Data resource profile: Clinical Practice Research Datalink (CPRD) Aurum. *International journal of epidemiology*, *48*(6), 1740–1740g.
World Health Organization (WHO) (2019). *Diabetes.*

Acknowledgements

Professor Kelvin P. Jordan, Dr John J. Edwards, Mr James Bailey, School of Medicine, Keele University