



Response at 3 months to insulin dose decisions made at exenatide initiation in the ABCD nationwide exenatide audit

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on behalf of the ABCD nationwide exenatide audit contributors

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Acknowledgment

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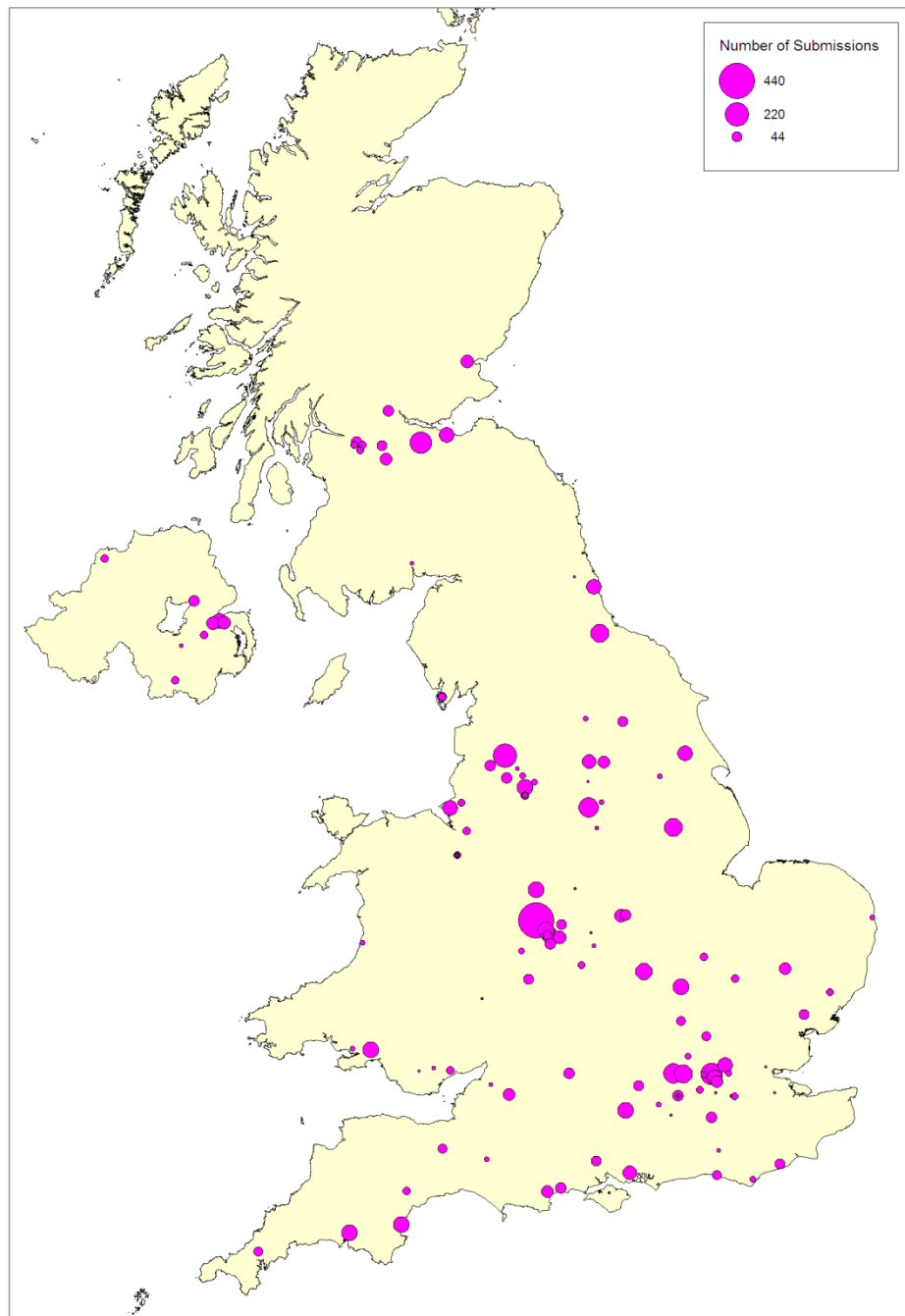


Exenatide and Insulin

- Exenatide, a GLP-1 agonist, is able to improve glycaemic control and promote weight loss in type 2 diabetes
- It is **not licensed** for use in combination with insulin
- Some obese patients on insulin may have been trialled on exenatide first if this was previously available

ABCD Nationwide Exenatide Audit

- In December 2008, the Association of British Clinical Diabetologists launched a nationwide audit on exenatide **in real clinical use**
- 315 contributors
- 126 centres
- 6717 patients



ABCD Nationwide Exenatide Audit

- In the audit, many patients were on insulin at exenatide initiation
- Some had their **insulin continued**
 - Insulin dose *unchanged*
 - Insulin dose *reduced*
- Some had their **insulin stopped**

ABCD Nationwide Exenatide Audit

- Possible reasons for **stopping** or **reducing** insulin:
 - Abide by **licensing** of exenatide use (stopping exenatide)
 - Promote **weight loss**
 - **?Insulin-sparing**
 - Avoid **hypoglycaemia**
- Possible reasons for **continuing insulin at unchanged doses**
 - Avoid worsening **glycaemic control**

ABCD Nationwide Exenatide Audit

- We chose to examine the response at 3 months to insulin dose decisions made at exenatide initiation

Total patients in audit

N = 6717

Patients with details of diabetes treatment at exenatide initiation

N = 6085

Patients with paired HbA1c or weight at baseline and 3 months

N = 3673

3514 gender
3505 age
3286 ethnicity
2929 diabetes duration
1946 BMI
1052 insulin dose

3291 paired HbA1c
3148 paired weight

Group 1
Non-insulin
N = 2427

Group 2
Insulin Continued
N = 927

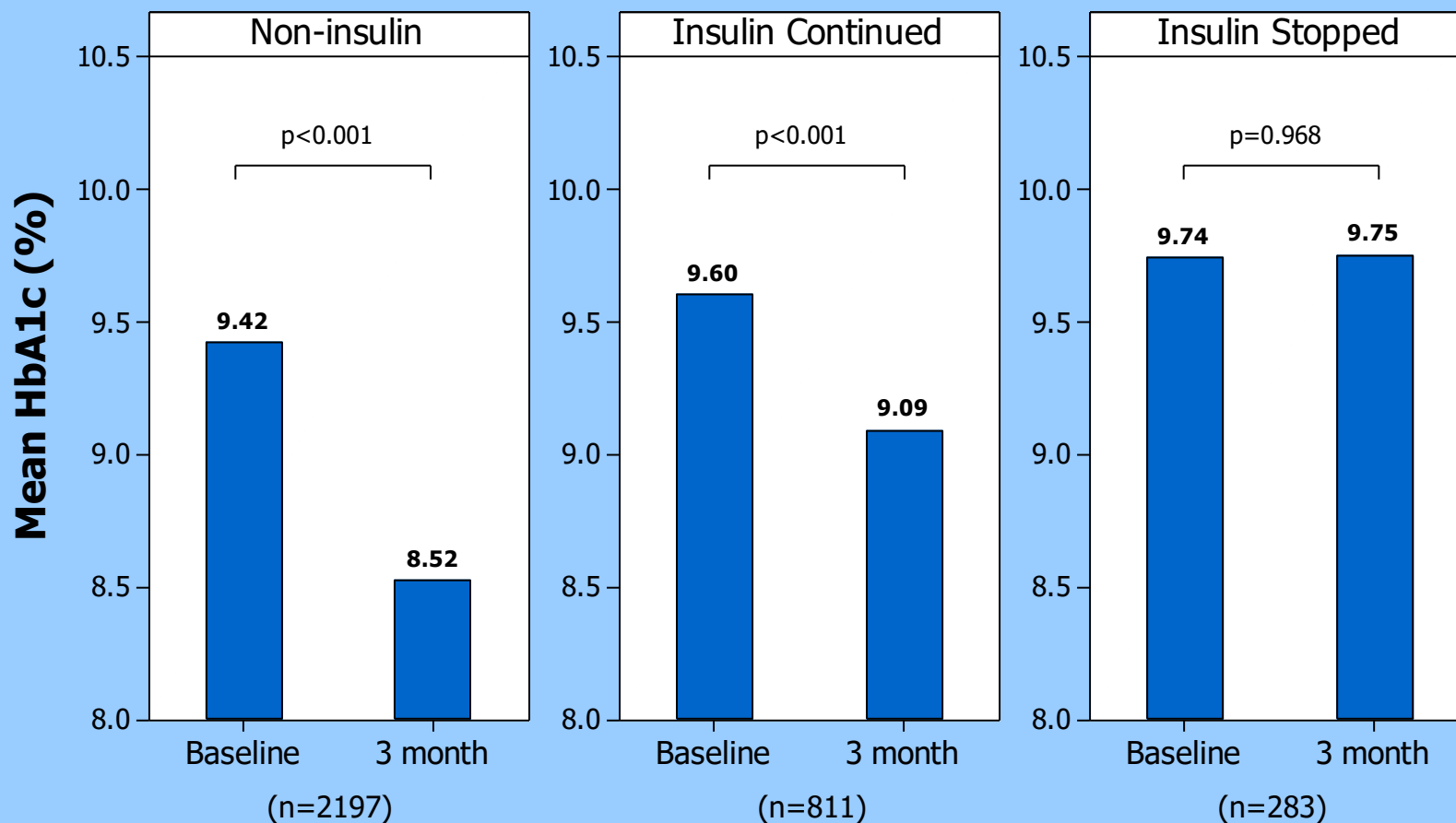
Group 3
Insulin Stopped
N = 319

Findings 1

- 1246/3673 (33.9%) of patients studied were on insulin at exenatide initiation in the ABCD exenatide audit
- Of these patients, 319/1246 (25.6%) had their insulin stopped

HbA1c and weight responses with exenatide at 3 months – non-insulin and insulin groups

Baseline vs 3 month HbA1c with exenatide treatment comparing groups of insulin use



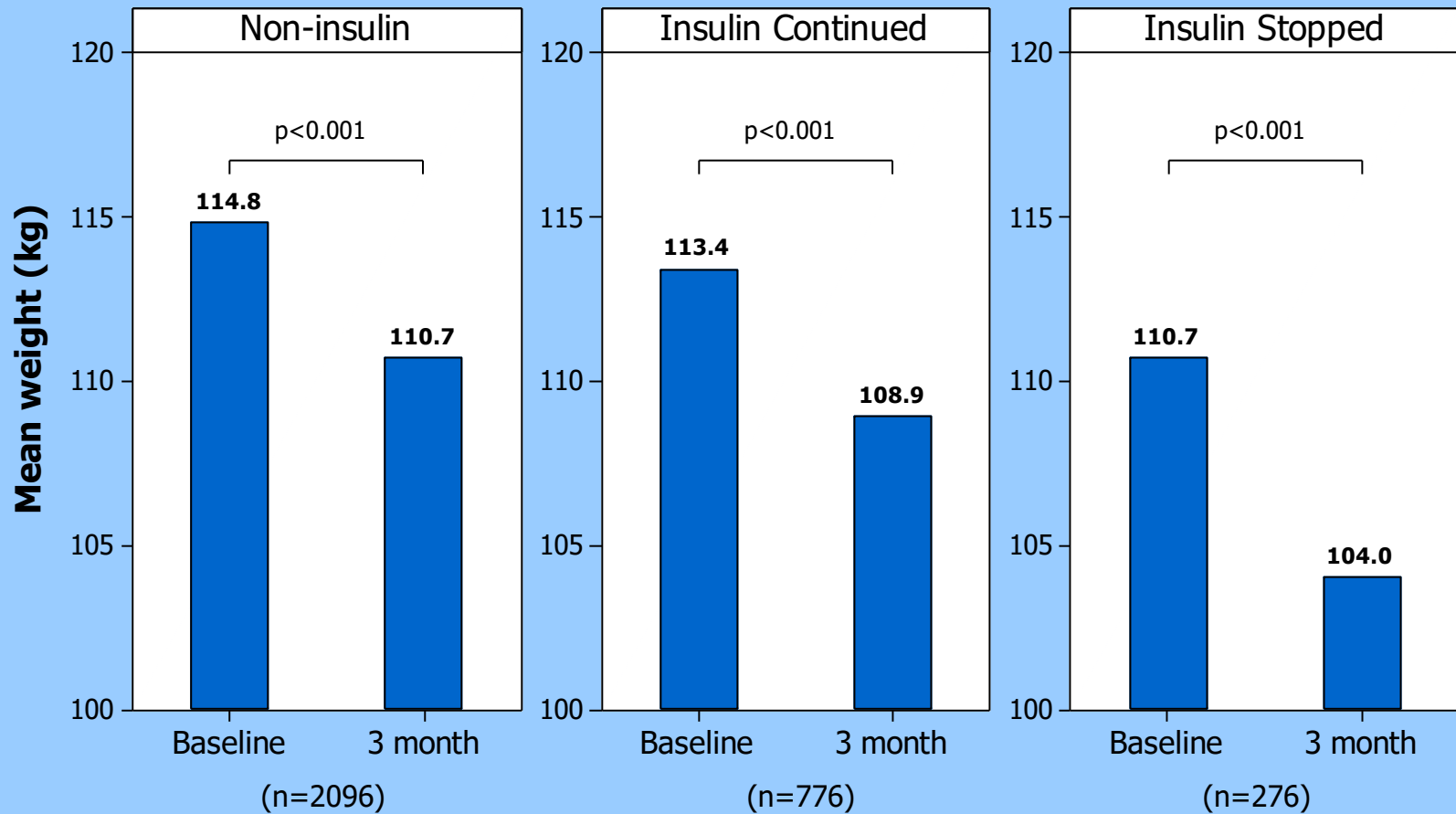
**Mean
change**

-0.90%

-0.51%

+0.00%

Baseline vs 3 month weight with exenatide treatment comparing groups of insulin use



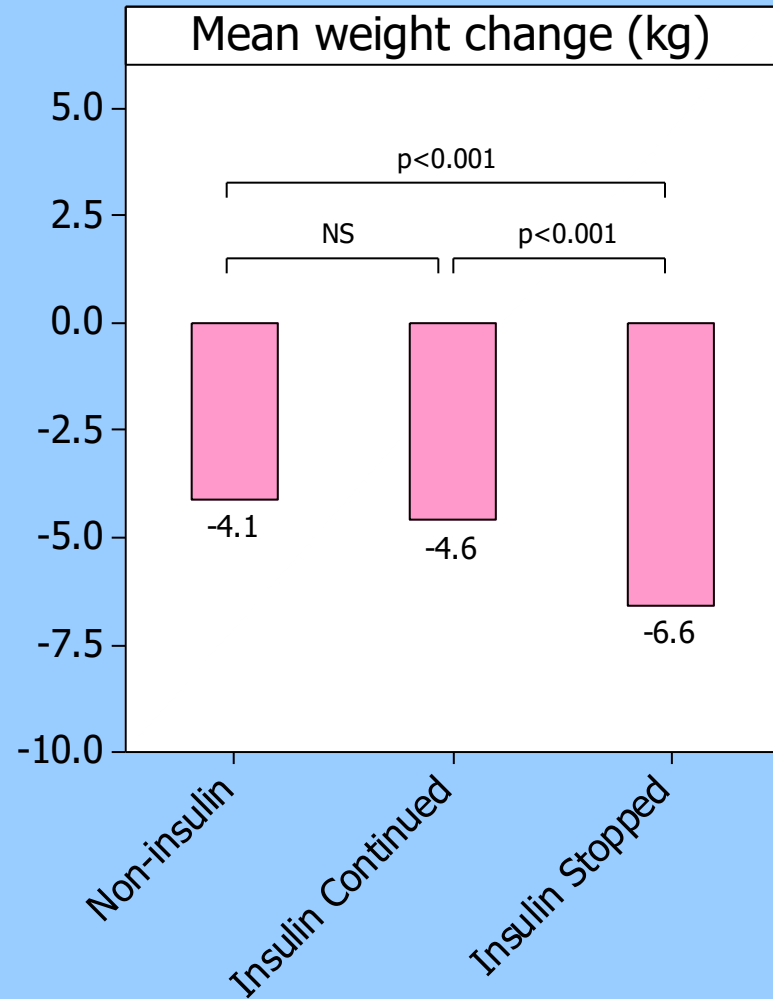
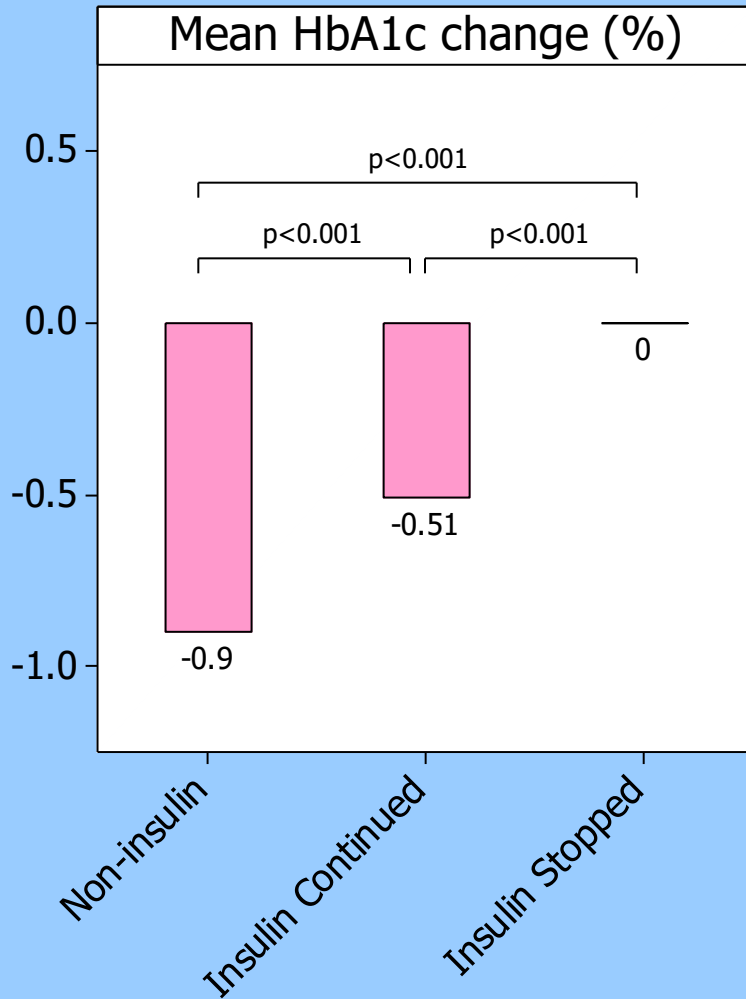
Mean
change

-4.1 kg

-4.6 kg

-6.6 kg

HbA1c and weight changes at 3 months with exenatide comparing groups of insulin use

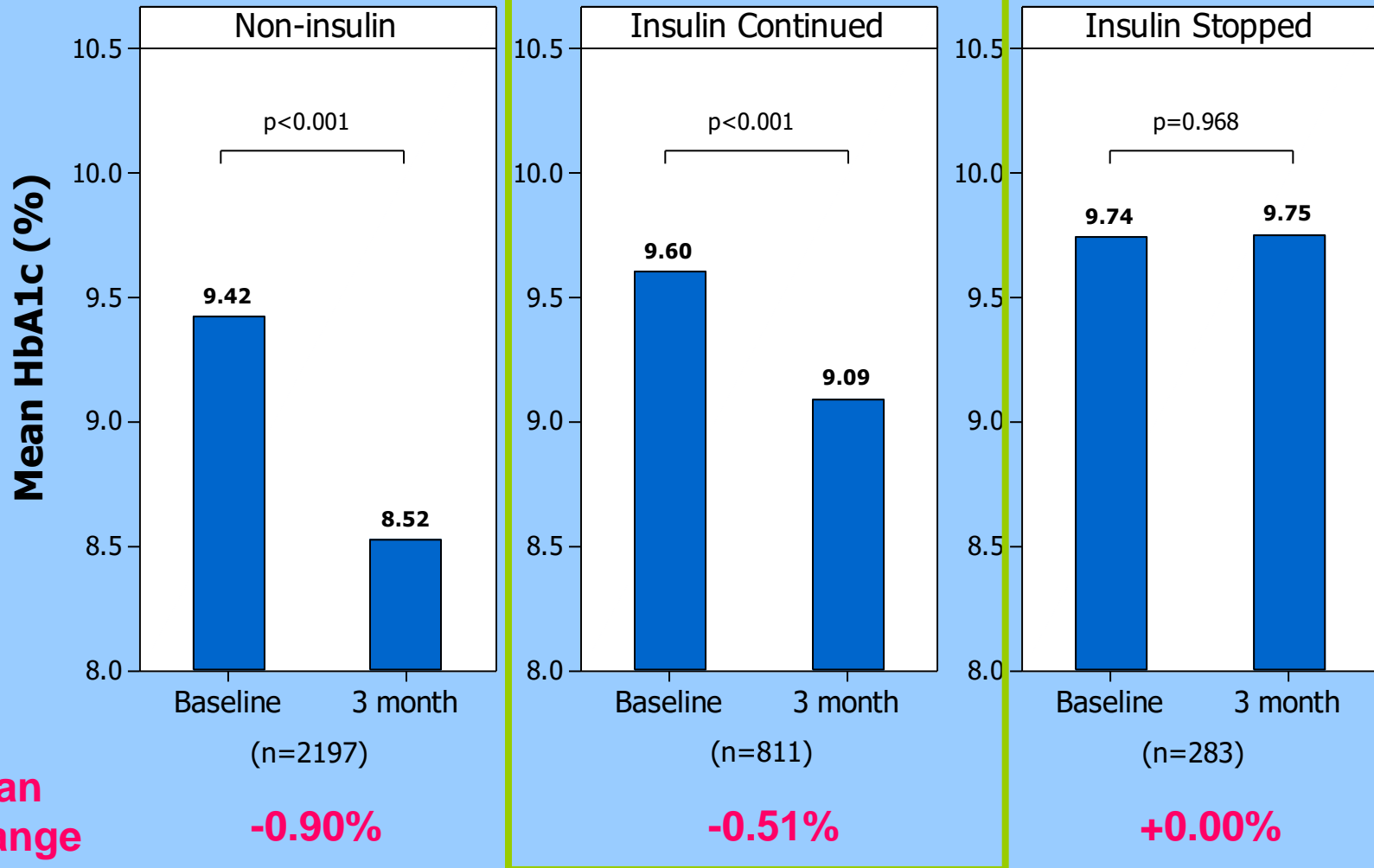


Findings 2

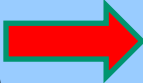
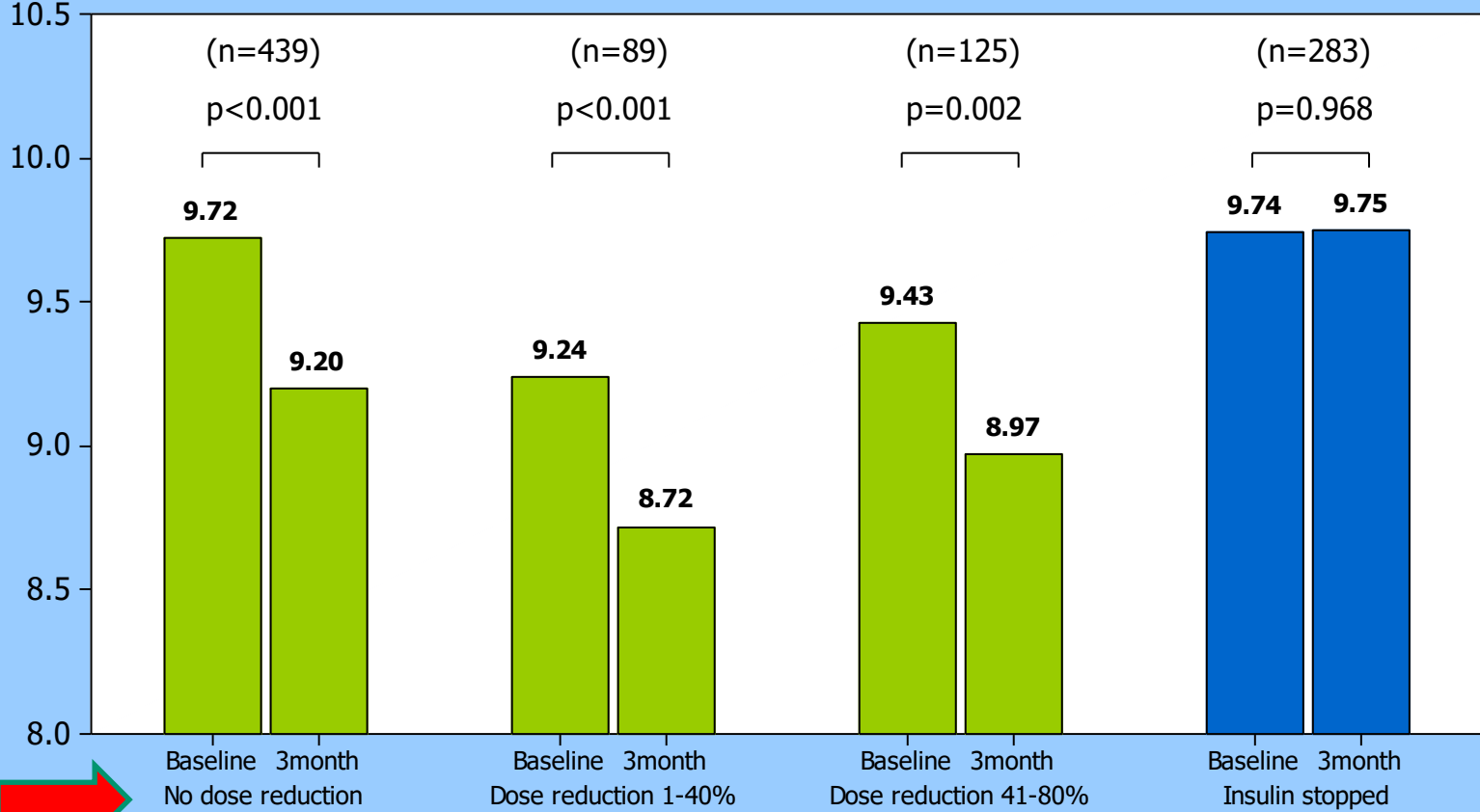
- Patients who continued insulin achieved further glycaemic reduction of 0.51%, and weight loss of 4.6 kg at 3 months
- Non-insulin patients obtained the most Hba1c benefit but the least weight benefit
- Patients who stopped insulin had the least (none) HbA1c benefit but the most weight benefit

HbA1c and weight responses with exenatide among insulin dose change groups

Baseline vs 3 month HbA1c comparing groups of insulin use with exenatide



Baseline vs 3 month HbA1c comparing insulin dose change groups with exenatide



Mean dose reduction

Mean HbA1c change

0%

-0.53%

25.2%

-0.52%

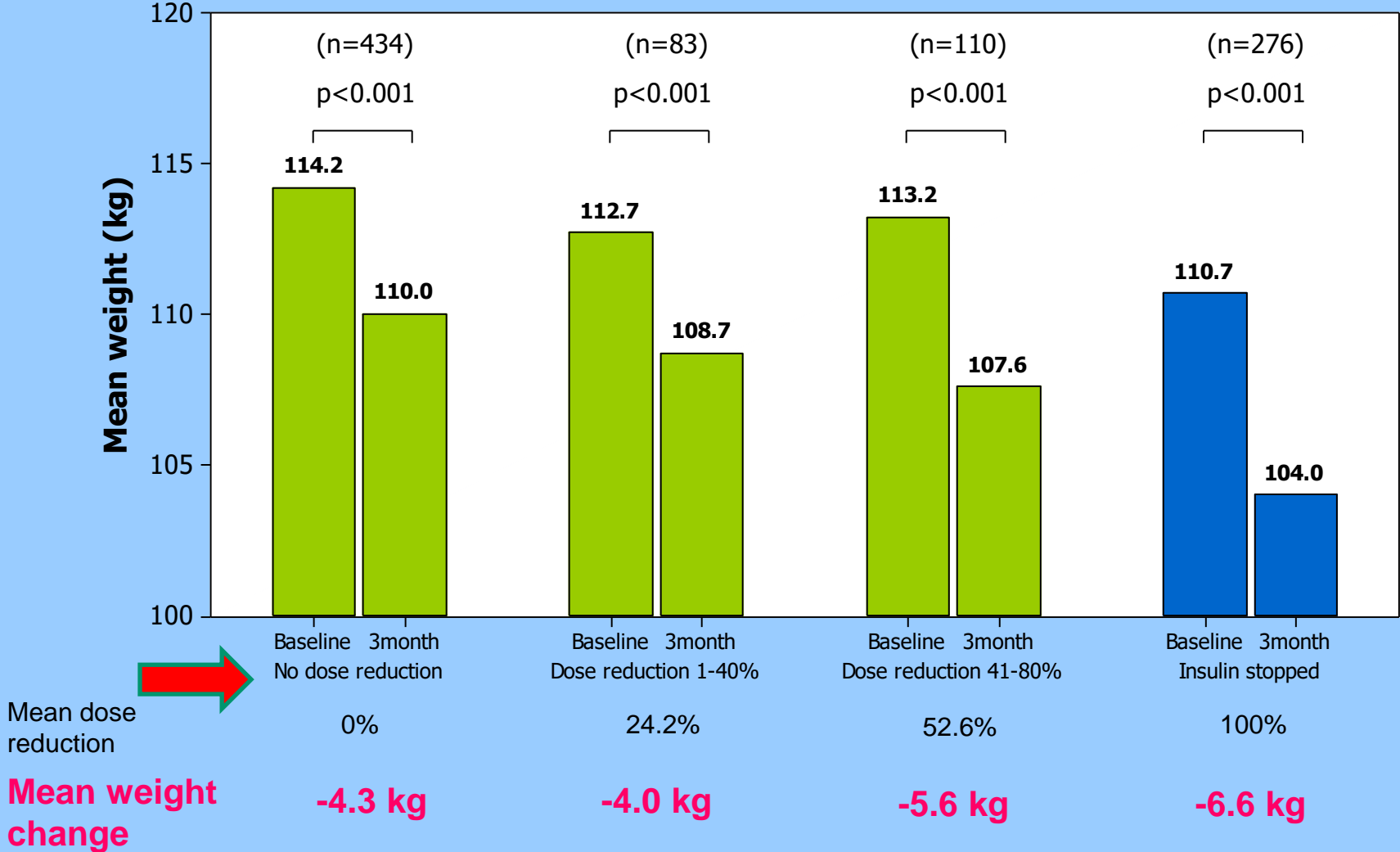
52.0%

-0.46%

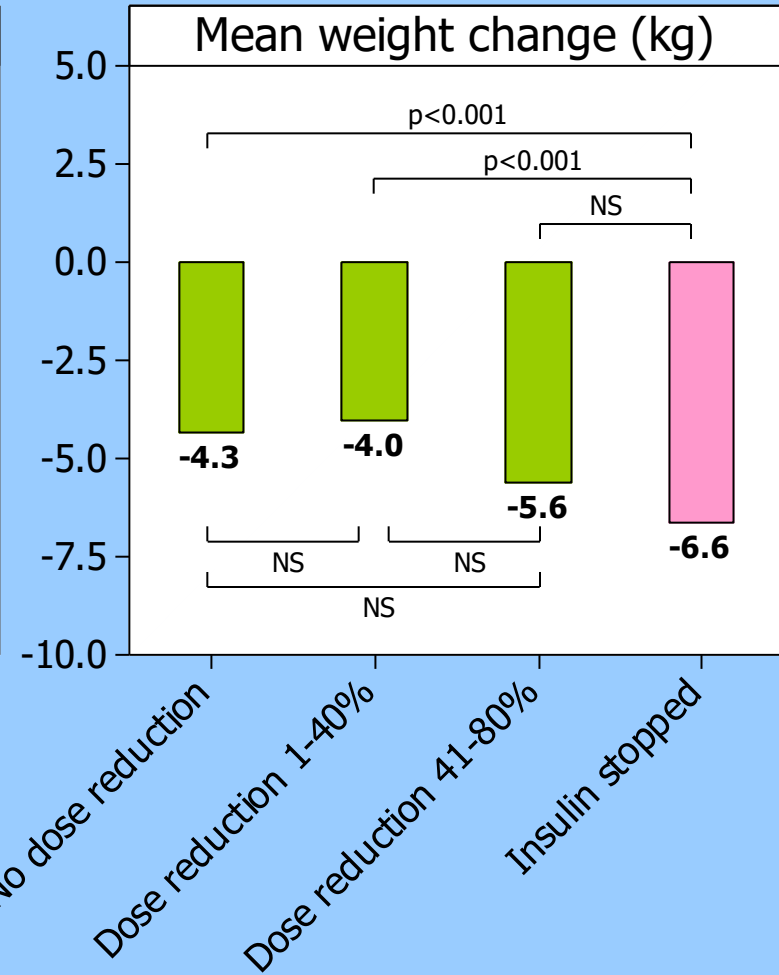
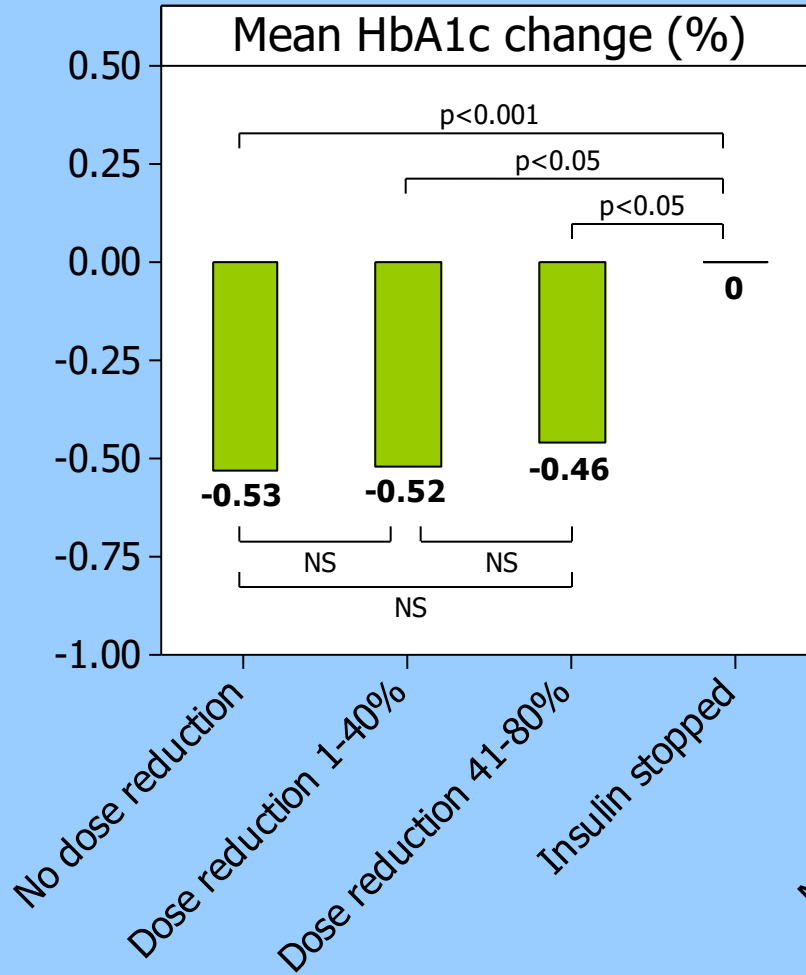
100%

+0.00%

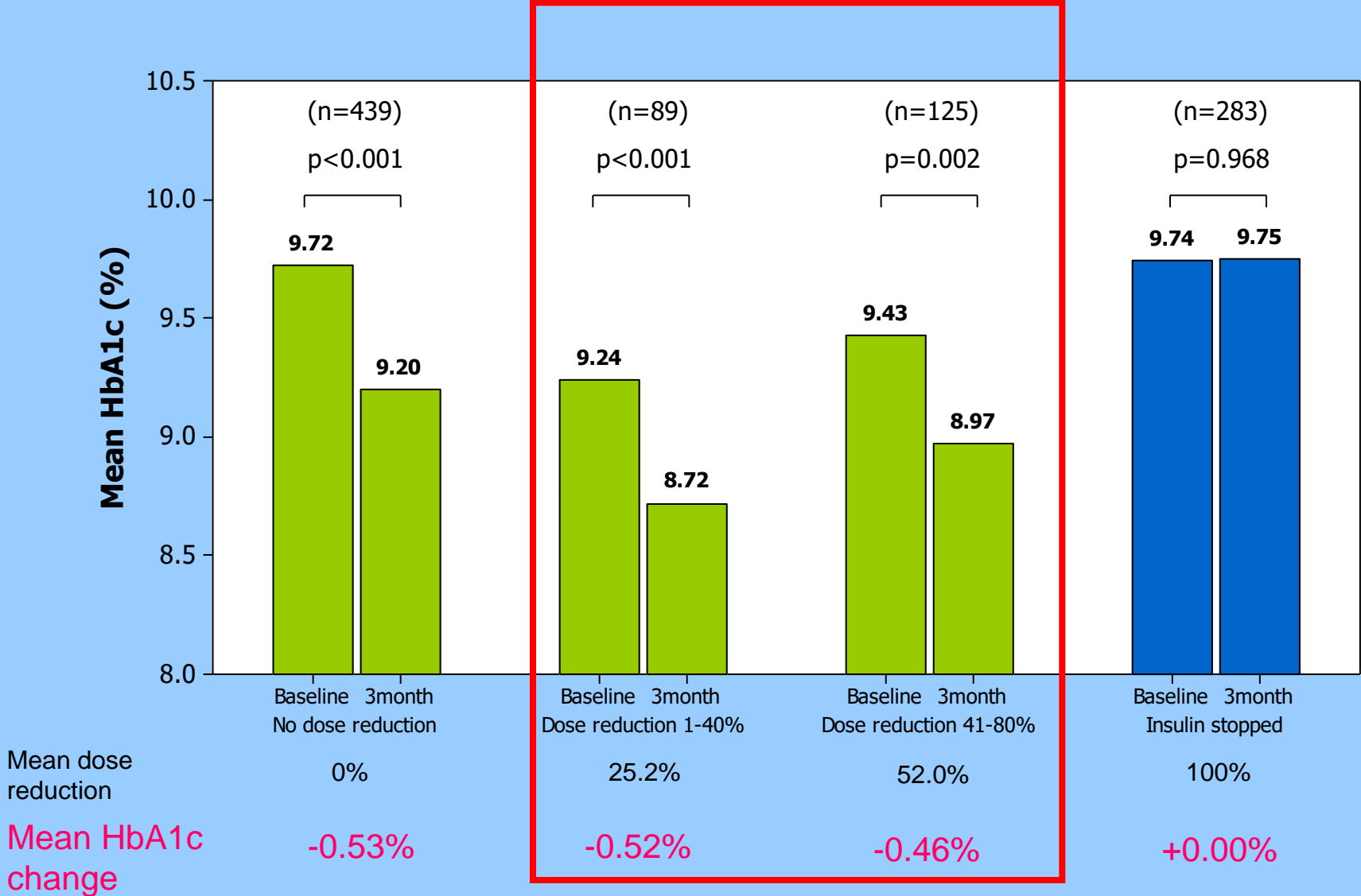
Baseline vs 3 month weight comparing insulin dose change groups with exenatide



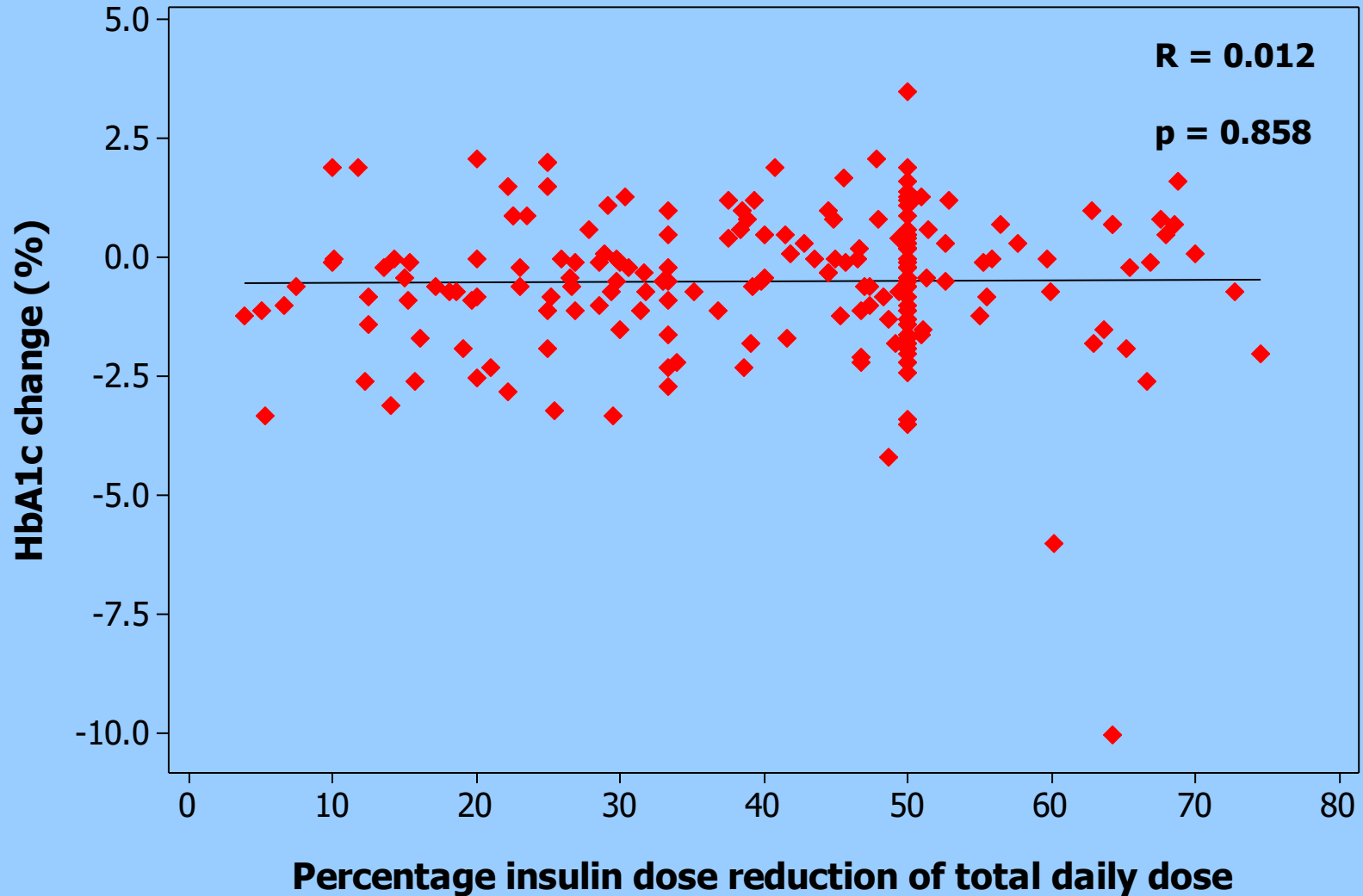
HbA1c and weight changes at 3 months comparing insulin dose change groups with exenatide



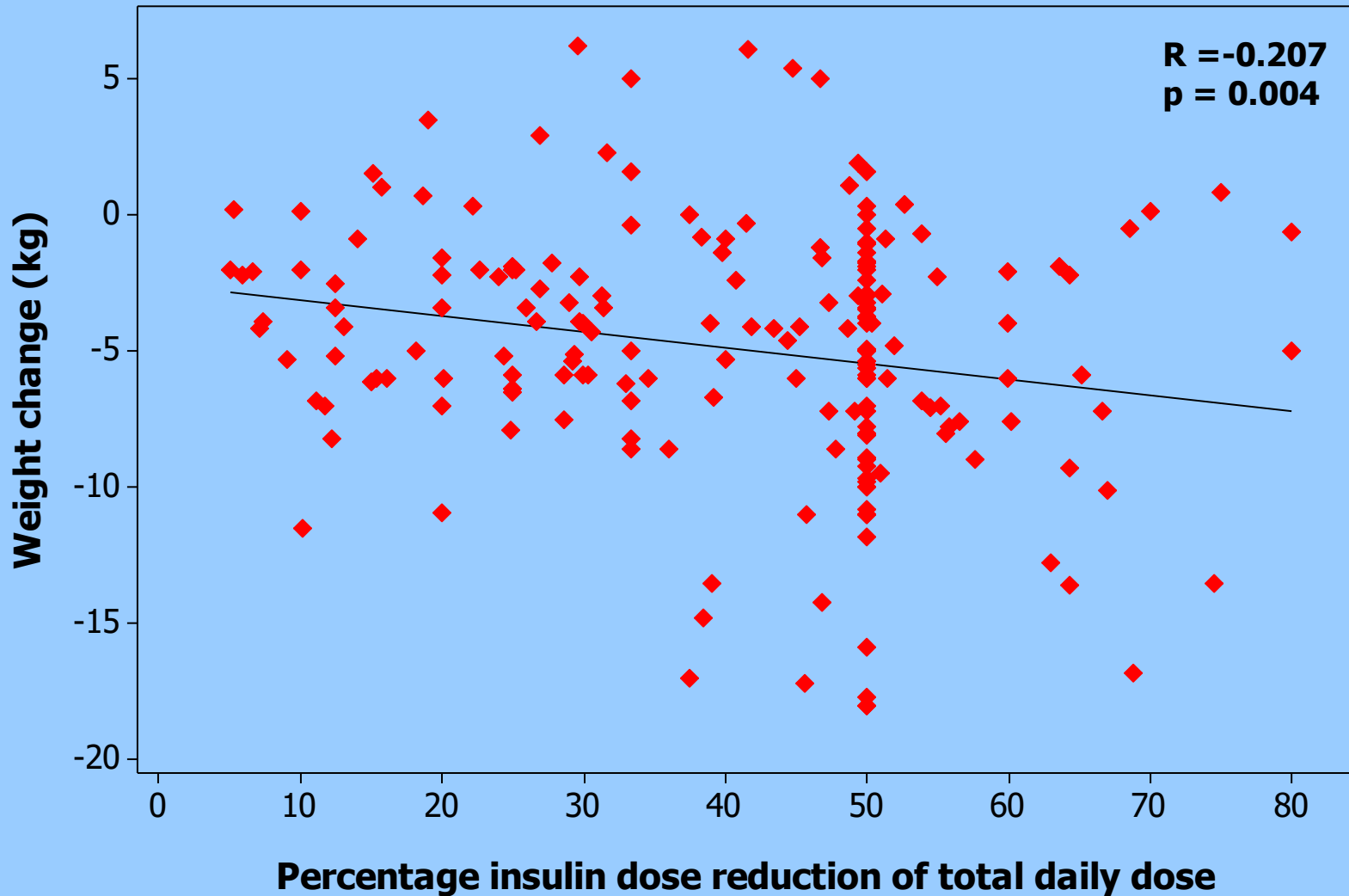
Baseline vs 3 month HbA1c comparing insulin dose change groups with exenatide



Correlation between insulin dose reduction and HbA1c change



Correlation between insulin dose reduction and weight change

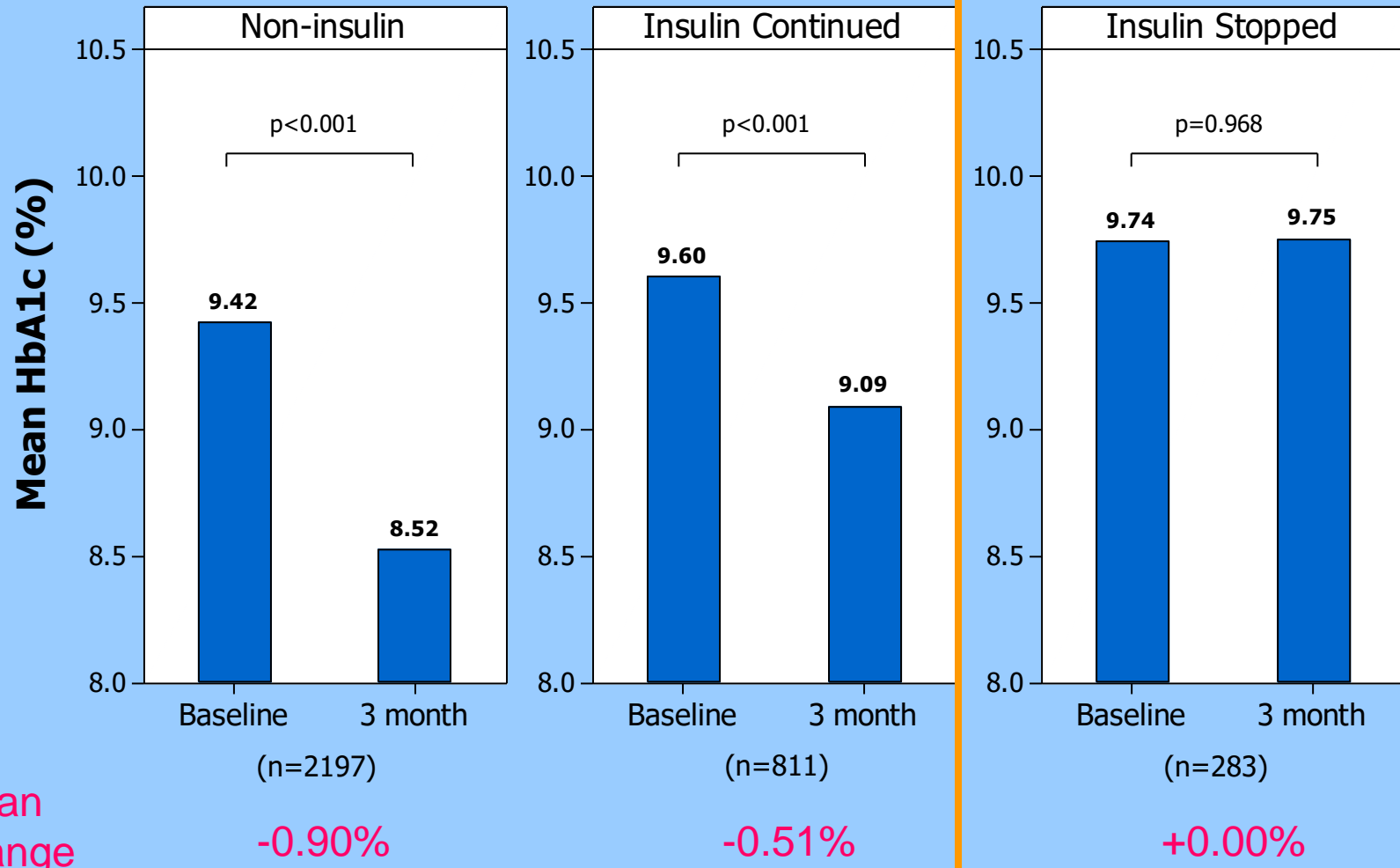


Findings 3

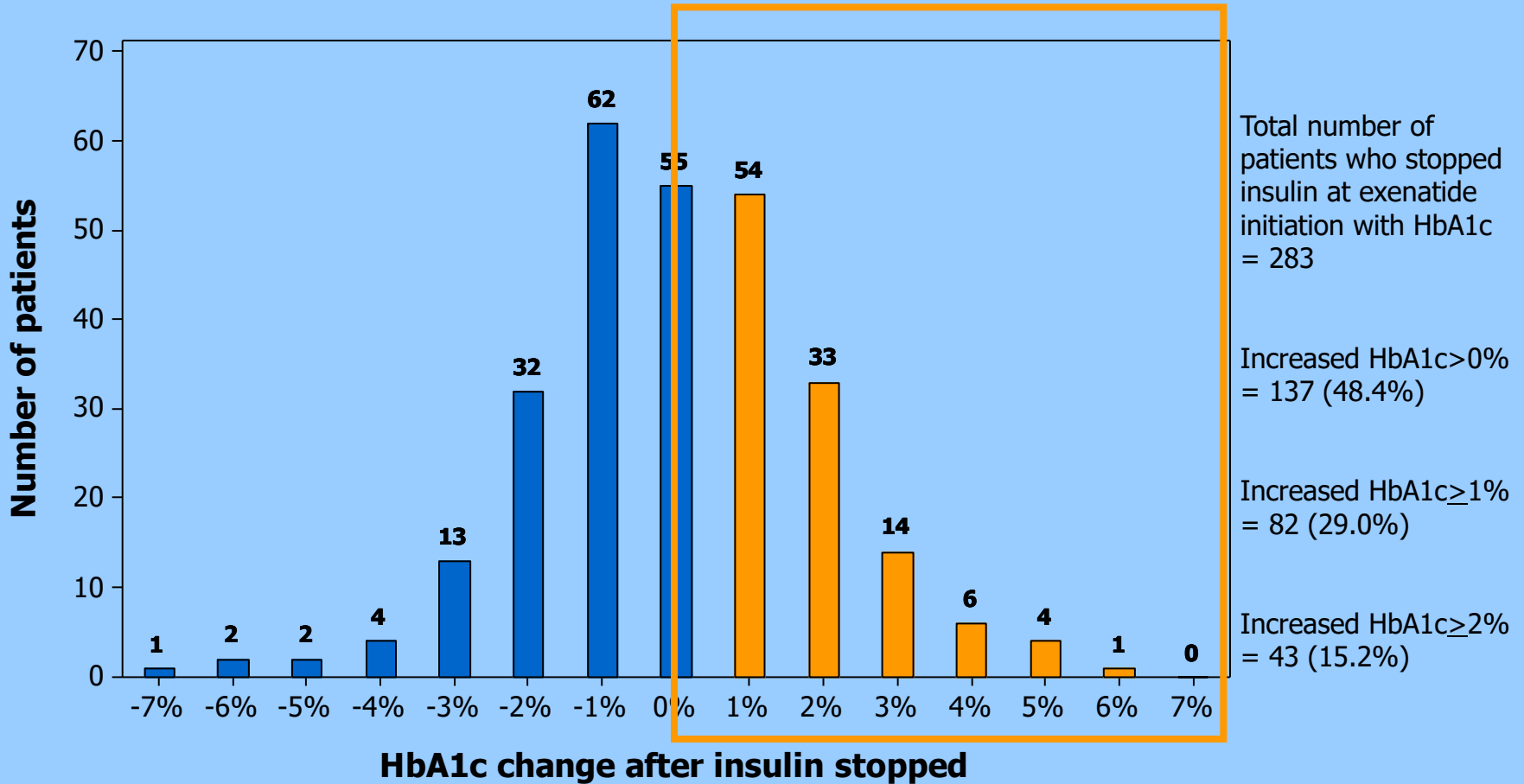
- Weight reduction, but not HbA1c change, correlated with insulin dose reduction
- There was **no clear threshold** whereby HbA1c or weight was affected, except when compared with insulin being stopped completely

Predictors of glycaemic deterioration when insulin was stopped at exenatide initiation

Baseline vs 3 month HbA1c comparing groups of insulin use with exenatide



HbA1c change at 3 months after exenatide start in insulin stopped group

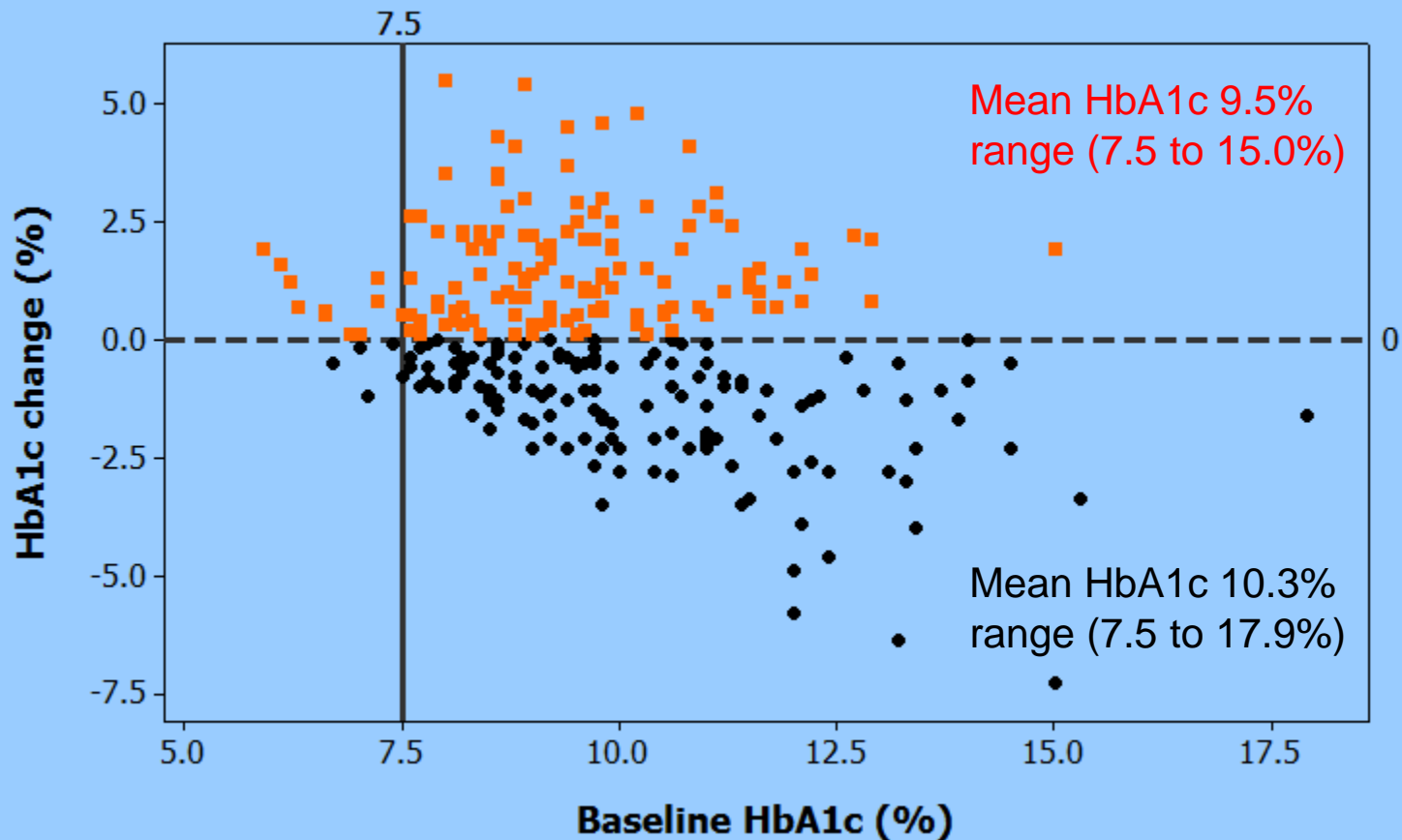


Groups of HbA1c represent changes of ±0.5%

Predictors of glycaemic deterioration in patients stopping insulin – multivariate analysis

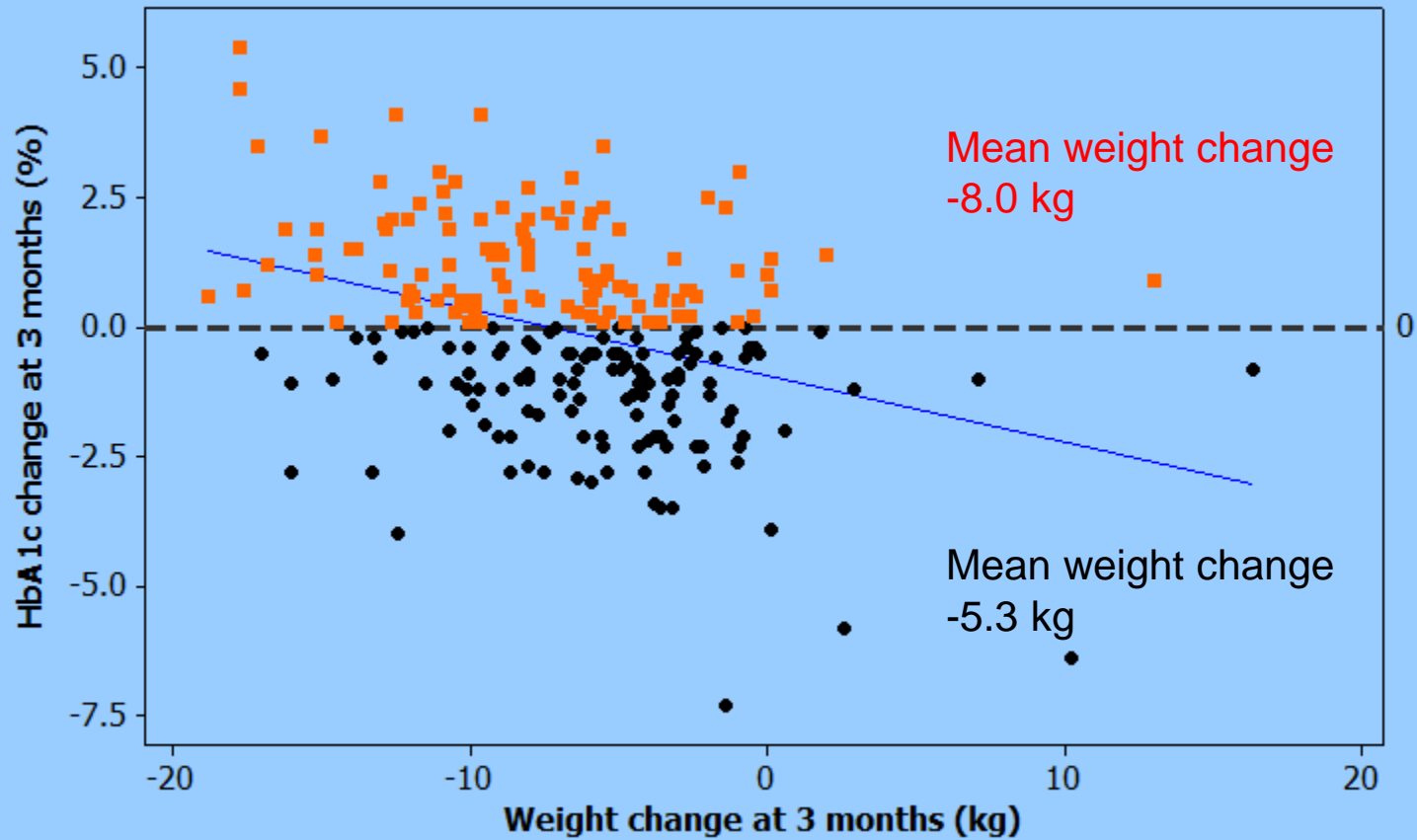
- Independent predictors:
 - Lower baseline HbA1c p<0.001
 - Higher weight loss at 3 months p=0.001
 - Higher tertile of total insulin dose p=0.009
 - Diabetes duration, SU/TZD reduction, use and stopping of long acting insulin did not reach significance

Baseline HbA1c as a predictor of glycaemic deterioration among patients who stopped insulin after exenatide start



A lower baseline HbA1c predicted an HbA1c deterioration or a higher baseline HbA1c predicted an HbA1c improvement

3 month weight loss as a predictor of glycaemic deterioration among patients who stopped insulin after exenatide start



Insulin dose as a predictor of glycaemic deterioration among patients who stopped insulin after exenatide start



	Tertile 1	Tertile 2	Tertile 3
Mean dose	30 U/day	69 U/day	174 U/day
Range	4 to 48 U/day	50 to 99 U/day	100 to 1120 U/day
Mean HbA1c change	-0.73%	+0.10%	+0.60%

Findings 4

- When insulin was stopped at exenatide initiation, nearly **half of the patients had worsening HbA1c**
 - this is in the background of already suboptimal glycaemic control
- Predictors of glycaemic worsening were a ***lower baseline HbA1c, higher amount of weight loss at 3 months*** and a ***higher total daily insulin dose***.

Exenatide and Insulin: Overall Conclusion



- The addition of exenatide to insulin led to further glycaemic improvement and weight loss
- Reducing or stopping insulin at exenatide initiation increased weight loss but at the expense of glycaemic control
- When insulin treatment was substituted by exenatide, a significant proportion of patients had worsening glycaemic control
- Practical conclusion – **don't stop insulin** when starting exenatide – aim to **wean off insulin** in the appropriate patients instead

ABCD nationwide exenatide audit contributors

The following are those whom we know about.

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- Results of exenatide and insulin combination after 3 months:

Poster 861

PS 078 (Incretins and insulin studies)

Thursday 1.30 to 2.30pm