



ABCD Nationwide Exenatide Audit

Dr Bob Ryder

on behalf of the ABCD nationwide
exenatide audit contributors:

ABCD Spring meeting, Bristol, May 8, 2009

ABCD nationwide exenatide audit contributors

The following are those whom we know about who contributed the 3913 patients who are the subject of this presentation. The full audit, which is ongoing, has many other contributors who will be listed in future presentations which will include their patients

ABCD nationwide exenatide audit – initial setup, maintenance and nationwide analysis: Ryder REJ, Walton C, Winocour P, Cull ML, Jose B, Sukumar N, Mills AP, Sands K. Statistical Advisor: Blann A.

Addenbrookes Hospital: Adler A, Evans M, Simmons D, O'Rahilly S, Coll T, Farooqi S, Park A. **Barnsley Hospital:** Uchegbu E. **Basildon University Hospital:** Mulcahy M, Krishnan L. **Basingstoke and North Hampshire NHS Foundation Trust:** Guy R, Turner B, Akester K, Lewis G, Harrison O, Tombling S, Lloyd G, Hughes C, Lowe C. **Bedford Hospital:** Morrish N, Melvin A, Pledger J, Barron R. **Bedfordshire & Hertfordshire PGMS, Luton:** Rehman T, Sinclair A. **Belfast City Hospital:** Henry W. **Bolton Diabetes Centre:** Palin S, Kenz S. **Bristol Royal Infirmary:** Raghavan R, Phillips S, Bradley K. **Bronglais Hospital, Aberystwyth:** Kotonya CA. **Caerphilly Hospital:** Premawardhana LDKE. **Chesterfield Royal Hospital:** Mohammad M, Robinson RTCE, MacInerney RM. **Chorley & South Ribble Hospital:** Rajbhandari SM, Acharya S. **City Hospital, Birmingham:** Ryder REJ, Basu A, De P, Lee BC, Jose B, Sukumar N, McAloon CJ, Blann A, Mills AP, Cull ML, Lee A, Rawcliffe C, Ryder B, Burbridge W, Irwin S, Cutler J, Zzizinger A, Mehrali T, Bedi T. **CMMC Foundation Trust, Manchester:** Jinadev P, Watts R, Abul-Ainine S, Salahuddin S. **Colchester General Hospital:** Bodmer C. **Conquest Hospital, St Leonards on Sea:** Dashora U, Castro E. **Countess of Chester:** Goenka N. **County Hospital, Hereford:** Lloyd J. **Craigavon Area Hospital, Co Armagh:** Ritchie C. **Daisy Hill hospital, Newry:** Adil MM. **Derriford Hospital, Plymouth:** English P. **Dumfries & Galloway Royal Infirmary:** Bell E. **East Surrey Hospital, Redhill:** Foster K, Natarajan G. **Eastbourne District Diabetes Centre:** Bending J, Afolayan J, Sheppard P. **Fairfield Hospital, Bury:** Rowles S, Smithurst HJ. **Falkirk and District Royal Infirmary:** Kelly C, Peden N, Currie J. **Furness General, Barrow In Furness:** Chuni P, Hay C, Narayan S, Krishnan S. **Gartnavel General Hospital:** McGrane D, Sainsbury C, Fisher. **George Eliot, Nuneaton:** Shaikh S. **Good Hope Hospital, Sutton Coldfield:** Jones SL, Milles JJ, Griffiths U, Colloby M, Harold C, Rangan S, Morrison J. **Great Western, Swindon:** Govindan J, Price P, Ahmed S, Gardner A. **Guys & St Thomas Hospital, London:** Brackenbridge A, Reid A, Piper-Smith J, Preston J. **Hammersmith and Charing Cross:** Field BCT, Dornhorst A. **Harrogate Hospital:** Hammond P, Thirumurugan E. **Heartlands Hospital, Birmingham:** John R, Patel M, Ulnaf S, Begum S. **Hillingdon Hospital, Uxbridge:** Edwards M, Doolittle H, Currie A, O'Sullivan S, Lillystone R. **Hinchinbrooke Hospital, Huntingdon:** Mathews AA. **Hull Royal Infirmary:** Walton C, Ng B, Kumar BK, Bosomworth A. **Ipswich Hospital:** Srinath A, Parkinson C, Fowler D, Morris D, Rayman G, Scott A. **James Paget Hospital, Great Yarmouth:** MacMillan C, Grinnell F. **King's College Hospital, London:** Lee M, Amiel S, Nathan Y. **Kingston Hospital:** Oldfield M. **Lagan Valley Hospital, Lisburn:** Au S, Turtle A. **Leicester General Hospital:** Tarigopula G, Braithwaite J, Kong M-F, Jackson S, Gregory R. **Leicester Royal Infirmary:** Lawrence L, Nisal K. **Lincoln County:** Sands K. **London Medical:** King L, Abraham R, Tomeu J. **Mayday University Hospital, Croydon:** Prentice M. **Medway Maritime Hospital, Gillingham:** Scobie IN. **Monklands Hospital, Airdrie:** Sandeep T. **Morrison Hospital, Swansea:** Stephens JW. **Newcastle General:** Taylor R. **Newham University Hospital, London:** Gelding S. **Nobles Hospital, Isle of Man:** Khan EG, Krishnan A, Clark J, Thondam S. **North Manchester General Hospital:** Rathur H, Savage M, Wiles P, Prakash P. **North Tees & Hartlepool Trust:** MacLeod J, Anthony S, Mehaffy J. **North Wales NHS Trust, Wrexham:** White H. **Northampton General Hospital:** Htike ZZ, Kilvert A, Mtemerewa B. **Orpington hospital, Kent:** Casiglia D. **Pinderfields General, Wakefield:** Nagi DK. **Poole Hospital NHS Foundation Trust:** Masding M, Osborne K, Wallace P. **PRH, Haywards Heath:** Smith A, Mabrook J. **Prince Philip Hospital, Llanelli:** Williams M, Aggarwal N. **Princess Royal, Bromley:** Lulsegg A. **Queen Alexandra, Portsmouth:** Cranston I, Darzy K. **Queen Elizabeth II Hospital, Welwyn Garden City:** Winocour PH. **Queen's Hospital, Burton:** Benn J. **Raigmore Hospital, Inverness:** McLaren L. **Rotherham General:** Franke B. **Royal Berkshire Hospital, Reading:** Simpson H, Reddy N, Barber T. **Royal Blackburn:** Astin J, Faina J, Whalley G, Ramtoola S. **Royal Bournemouth:** Richards J, Richardson T. **Royal Cornwall Hospital, Triliske:** Fox T. **Royal Devon & Exeter:** Bowman P, Hattersley A, Vadiya B. **Royal Glamorgan Hospital, Llantrisant:** Evans P. **Royal Gwent Hospital, Newport:** Obuobie K. **Royal Infirmary of Edinburgh:** Jaap A. **Royal Liverpool University Hospital:** Vora J, Brake J. **Royal Oldham Hospital:** Mishra BM. **Royal Surrey County Hospital, Guildford:** Hordern V. **Royal United Hospitals, Bath:** Higgs E, Gouni R, Taylor P, Wylie S, Hall B, Hillier N, Neathercote D. **RSCH, Brighton:** Quin J, Robinson N. **Sandwell Hospital, West Bromwich:** Ibrahim H, Robertson D, Davies P, Banerjee P, Li YK, Wong KH, Barker N, Dhallu J, Farell D. **Scunthorpe General:** Moisey R, Malik M, Dromgoole P. **Selly Oak Hospital, Birmingham:** Creely S, Gough S, Hanif W. **Sheffield Teaching Hospitals:** Elliott J, Scott A. **South East CHCP, Glasgow:** Carson L-A. **Southampton General Hospital:** Sharp P, Brown B. **Southern General Hospital, Glasgow:** Semple C. **St John's Hospital, Livingston:** Adamson K, Green F. **St Mary's Hospital, Isle of Wight:** Kaklamanou M, Al-Mrayat M. **St Peter's Hospital, Chertsey:** Sennik D, Baxter M, Naqvi S, Suresh D, Miras A. **Staffordshire DGH, Stafford:** Coates P, Daggett P, Green F. **Stirling Royal Infirmary:** Kelly C, Mackenzie A, Peden N. **Sunderland Royal:** Nayyar R, Carey P, Aspray T. **Taunton & Somerset:** Close C, Andrews R, Douek I, Watson J. **Torbay Hospital, Torquay:** Paisey R. **University Hospital Coventry Warwickshire:** Anderson S. **Ulster Hospital, Belfast:** Satti N, Harper R, Harding J. **Victoria Infirmary, Glasgow:** Stewart A. **Warwick Hospital:** Rao RK, Gopinathan, Horrocks P. **West Suffolk Hospital, Bury St. Edmunds:** Majeed J, Clark J, Wijenaike N, Gurnell E, Hartley L, Abdullah H, Marath H. **Western General Hospital, Edinburgh:** Aniello L. **Wexham Park, Slough:** Dove D. **Whipps Cross University Hospital, London:** Lakhdar A, Manogaraan B. **Wirral Teaching Hospital, Upton Wirral:** Leong KS, Lorains J, Joseph P, Leach J, Fenna I. **Wishaw General, Lanarkshire:** O'Brien I, Davidson E. **Worcestershire Acute Hospitals, Worcester:** Newrick P, Jenkins D. **Wrexham Maelor:** Dixon AN, Munigoti S, Stanaway S. **Wythenshawe Hospital, Manchester:** Younis N. **Yeovil District Hospital:** Bickerton AST, Crocker M, Down S. **York Hospital:** Jennings P, Hudson N.

Acknowledgment

The ABCD nationwide exenatide audit is an independent audit supported by an unrestricted grant from Eli Lilly Ltd

This message was sent with High importance.

From: ABCD Administration [ABCD.Administration@svbh.nhs.uk]

Sent: Wed 18/02/2009 10:38

To: ABCD membership

Cc:

Subject: ABCD Exenatide Nationwide Audit - We need to receive all data submissions by Midnight Tonight the 18th February.

ABCD Exenatide Nationwide Audit Last Day Reminder

Only ***a few hours*** to go until the **Deadline for All data submissions Midnight 18th February 2009**

The Nationwide Exenatide Audit was launched on 12th December 2008 and all ABCD members are strongly encouraged to contribute all, or as many as possible, of their exenatide patients by 18th February, 2009.

We need to **receive all data submissions by Midnight Tonight - Wednesday the 18th February.**

Don't forget everyone involved in the audit will be included in any publications.

ABCD has 500+ members and so far **we have been promised approx 6500** patients. We are aware that there are however many more than this and **so far we only have 4356** of these **6500** actually entered - lets see if we can't get the actual figure submitted higher - the more we have the more informative will be the outcome and the more likely to help with clinical practice, whether exenatide 'does as it says on the tin' or whether it doesn't.

Don't forget that the **first presentation** of the audit will be an oral presentation in **Glasgow on 10th March 2009 at a satellite meeting of DUK**. Other presentations and publications to follow.

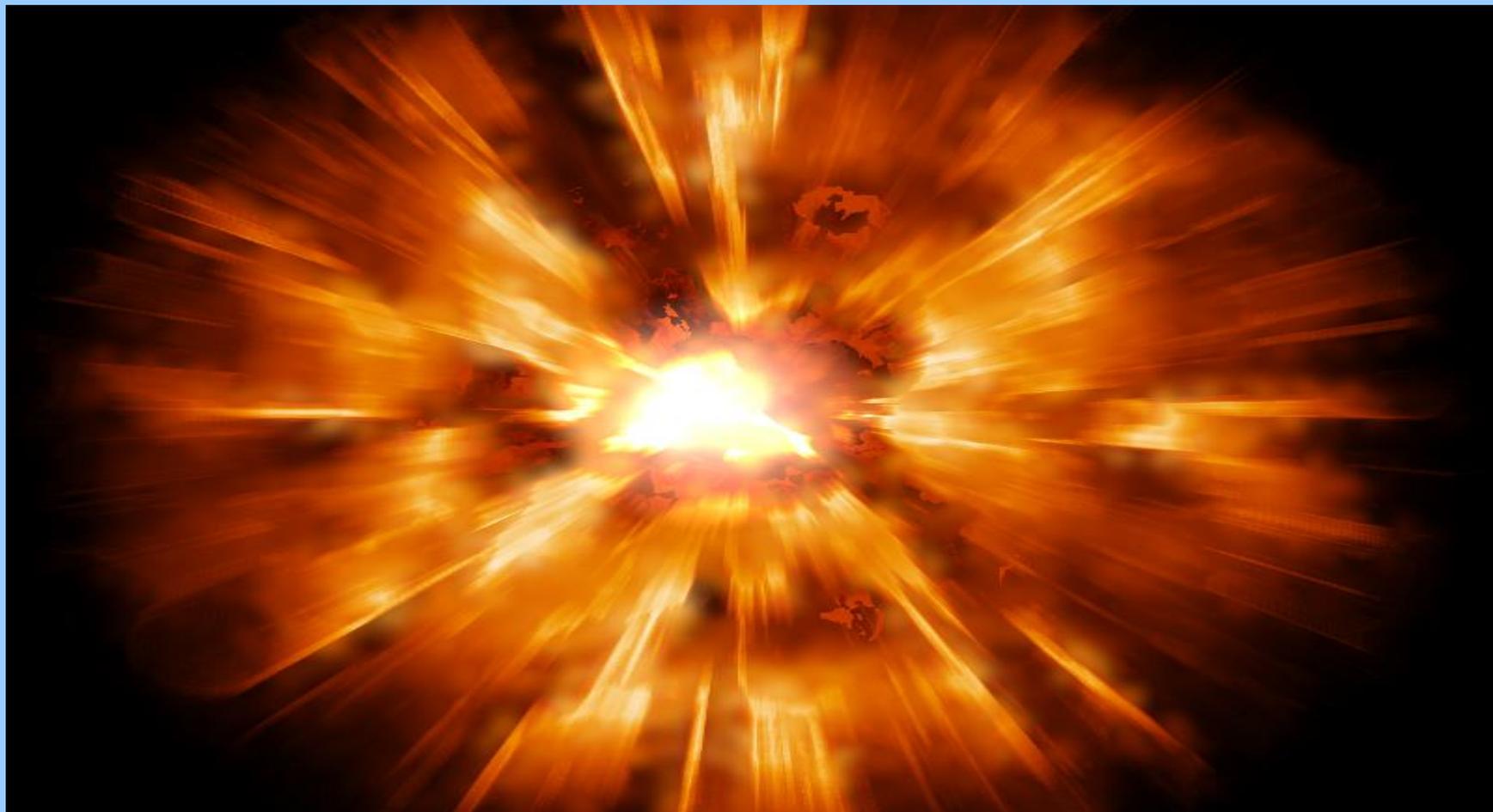
Yours Sincerely

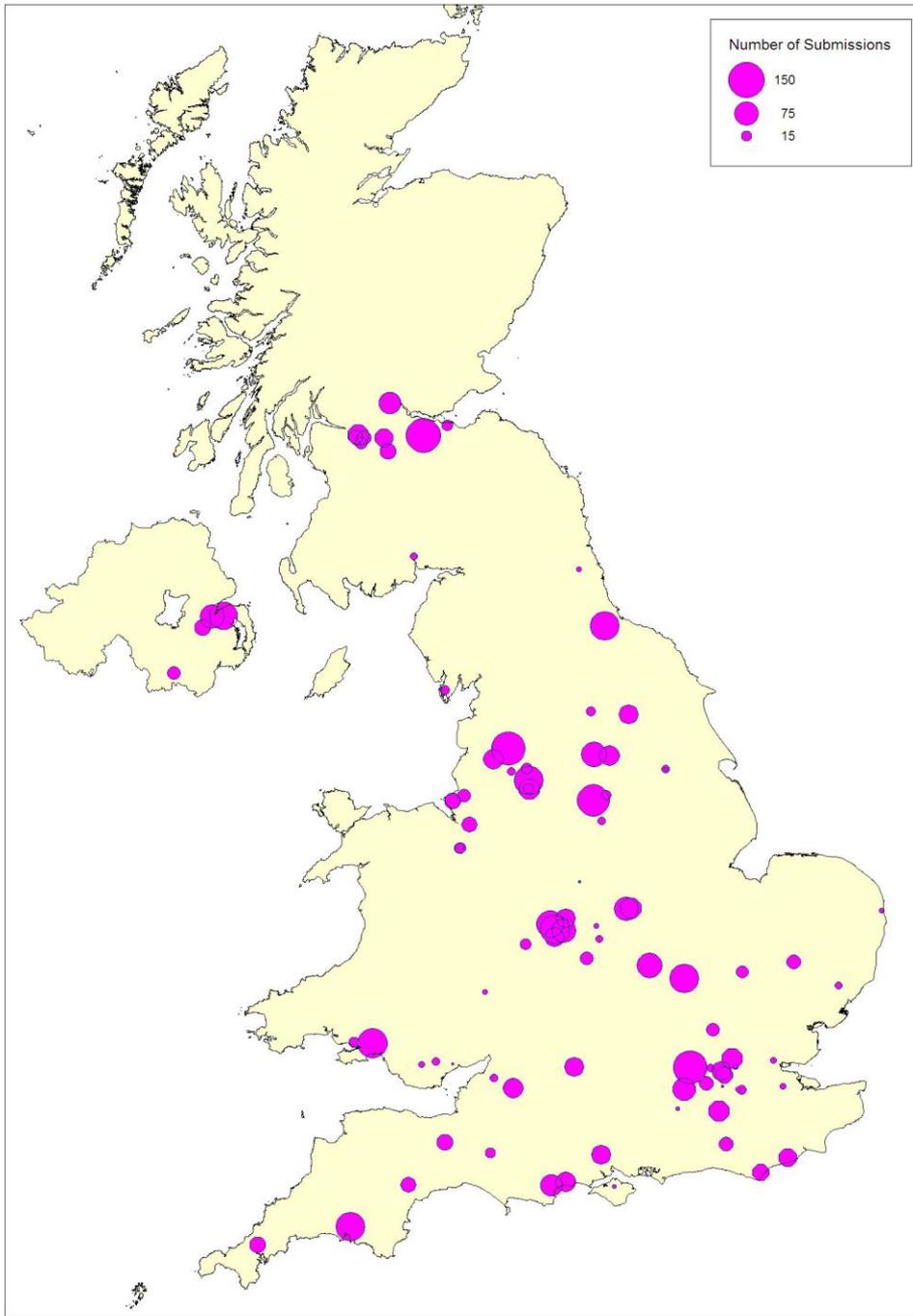
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ABCD Nationwide Exenatide Audit





Top contributors > 100 patients

1.	Bob Ryder, Hisham Ibrahim, Peter Davies et al, SWBH NHS Trust	174
2.	Karen Adamson, Ferelith Green et al, St John's Hospital, Livingston	145
3.	David Dove et al, Wexham Park Hospital, Slough	137
4.	Mark Edwards, Helen Doolittle et al, The Hillingdon Hospital, Uxbridge	136
5.	Laila King, Ralph Abraham et al, London Medical, London	134
6.	Shenaz Ramtoola & Geraint Jones et al, Royal Blackburn Hospital, Blackburn	133
7.	Jackie Elliott et al, Sheffield Teaching Hospitals, Sheffield	119
8.	Jeffrey W Stephens et al, Morriston Hospital, Swansea	110
9.	Richard Paisey et al, Torbay Hospital, Torquay	104
10.	Patrick English et al, Derriford Hospital, Plymouth	104
11.	Alison Melvin, Julia Pledger & Nick Morrish et al, Bedford Hospital, Bedford	103
12.	Julie Mehaffy Jean MacLeod et al, North Tees General Hospital, Stockton-on-Tees	102
13.	Phil Coates, Peter Daggett, Gill Green et al, Staffordshire DGH, Stafford	102
14.	Mark Savage, Phil Wiles & Parmeshwara Prakash et al, North Manchester General	101

ABCD Nationwide Exenatide Audit

Opening the box on February 18

If only it could have been prospective!



Many spreadsheets many problems

- Lilly Spreadsheets
- Other Non-Standard Spreadsheets
- ABCD Spreadsheets Altered - fields added
- ABCD Spreadsheets Altered - fields deleted
- Non-Standard Unique ID's used (led to apparent duplication)
- Duplicates – record was same patient entered x times on same spreadsheet!
- Missing Dates - HbA1c
- Missing Dates - Weight
- Missing Dates - Lipids
- Data in incorrect columns
- Incorrect Data - Heights
- Incorrect Data - Weights
- Incorrect Data - HbA1c
- Incorrect Data - Lipids
- Numbers in Text columns
- Text in Number columns
- Numbers in Date columns
- Dates in Number columns
- Text in Date columns
- Partial Dates
- ? Marks
- X Marks
- N/A
- DNA
- dna
- Transposed columns
- Non Standardised data format
- Not using comments box for comments - sticking everywhere else
- Fields renamed

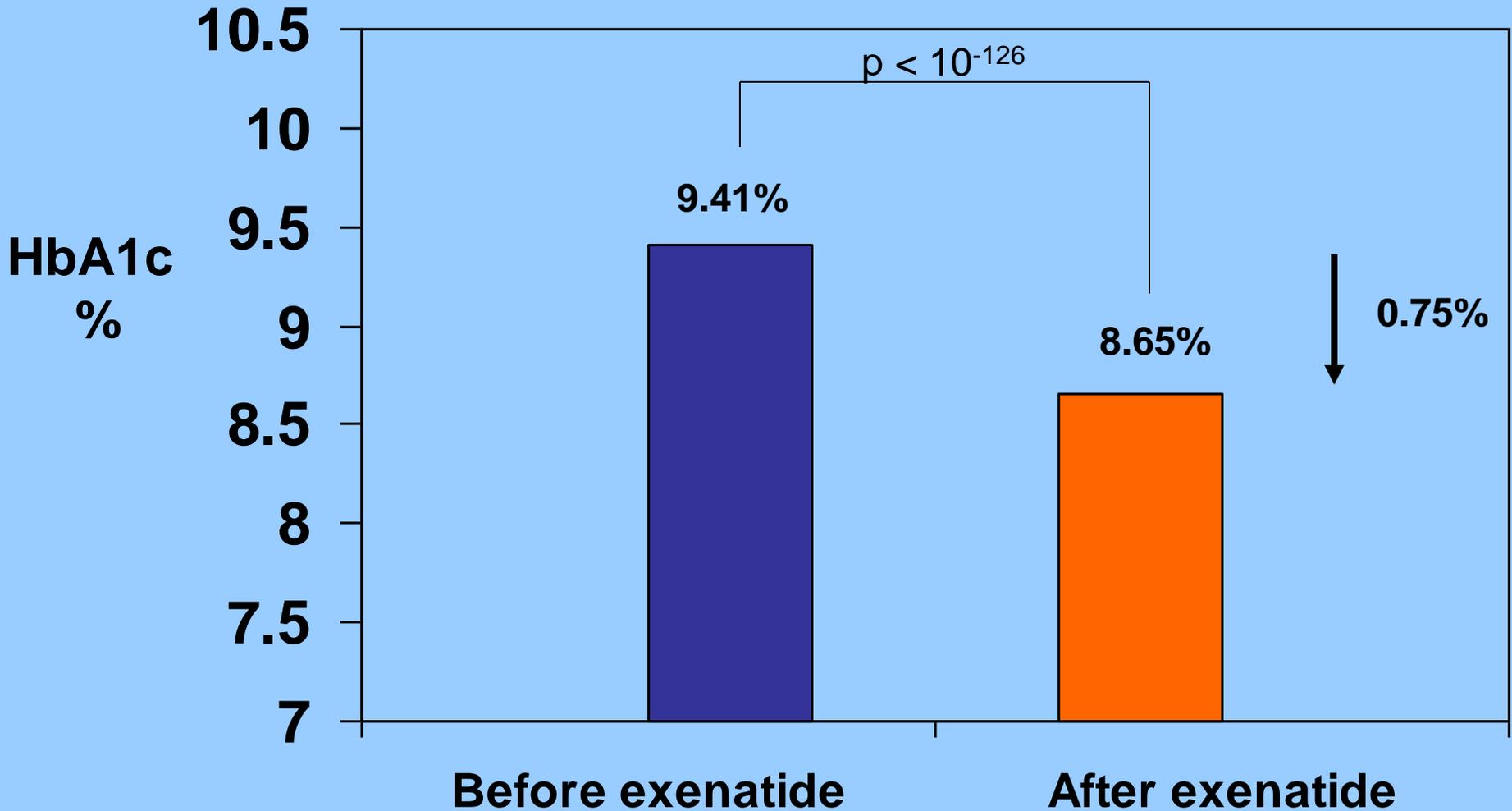
ABCD Nationwide Exenatide Audit

- 7559 patients promised
- 5313 patients had data actually entered
- 3913 data usable

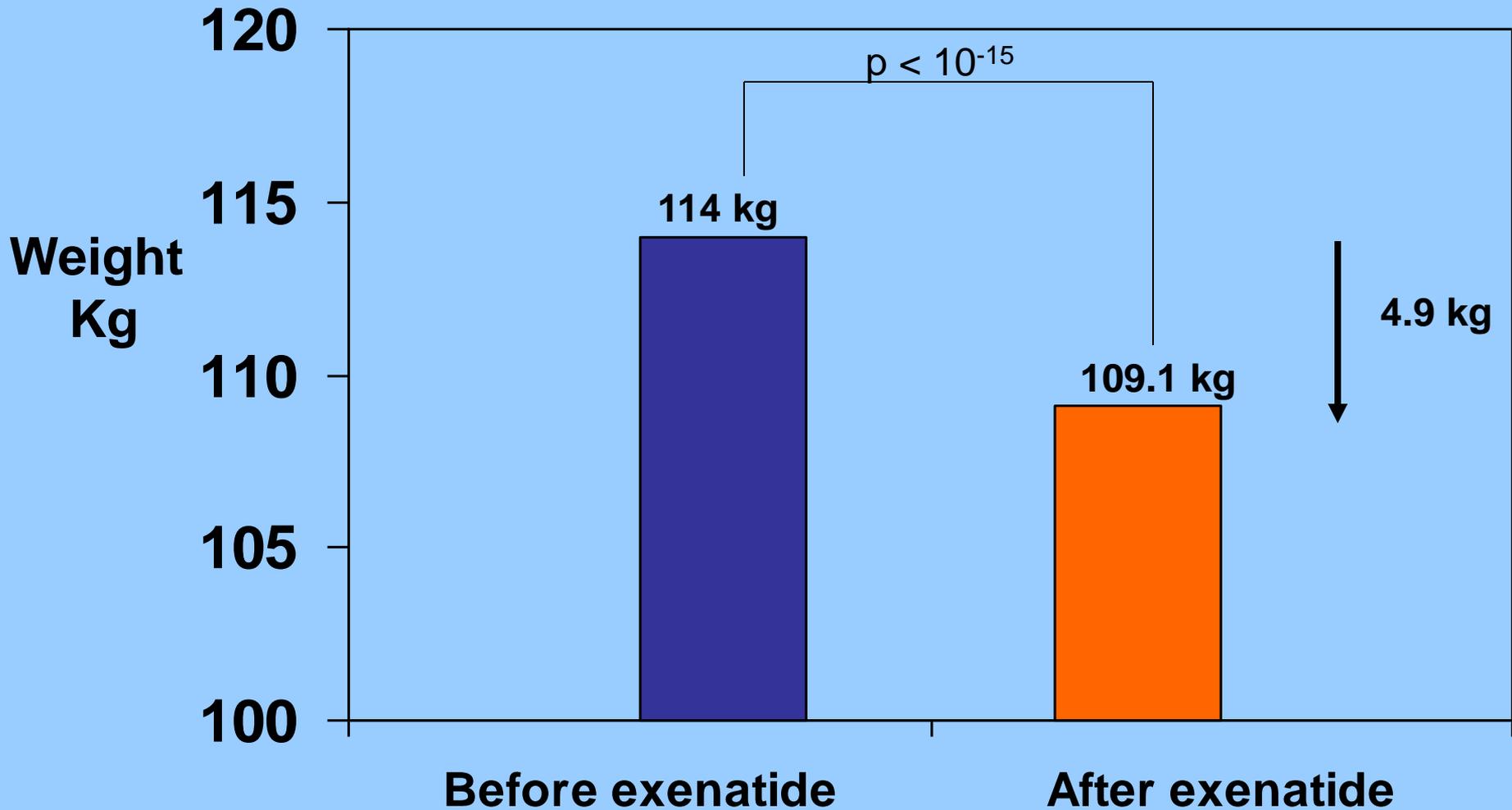
ABCD Nationwide Exenatide Audit

- 7559 patients promised
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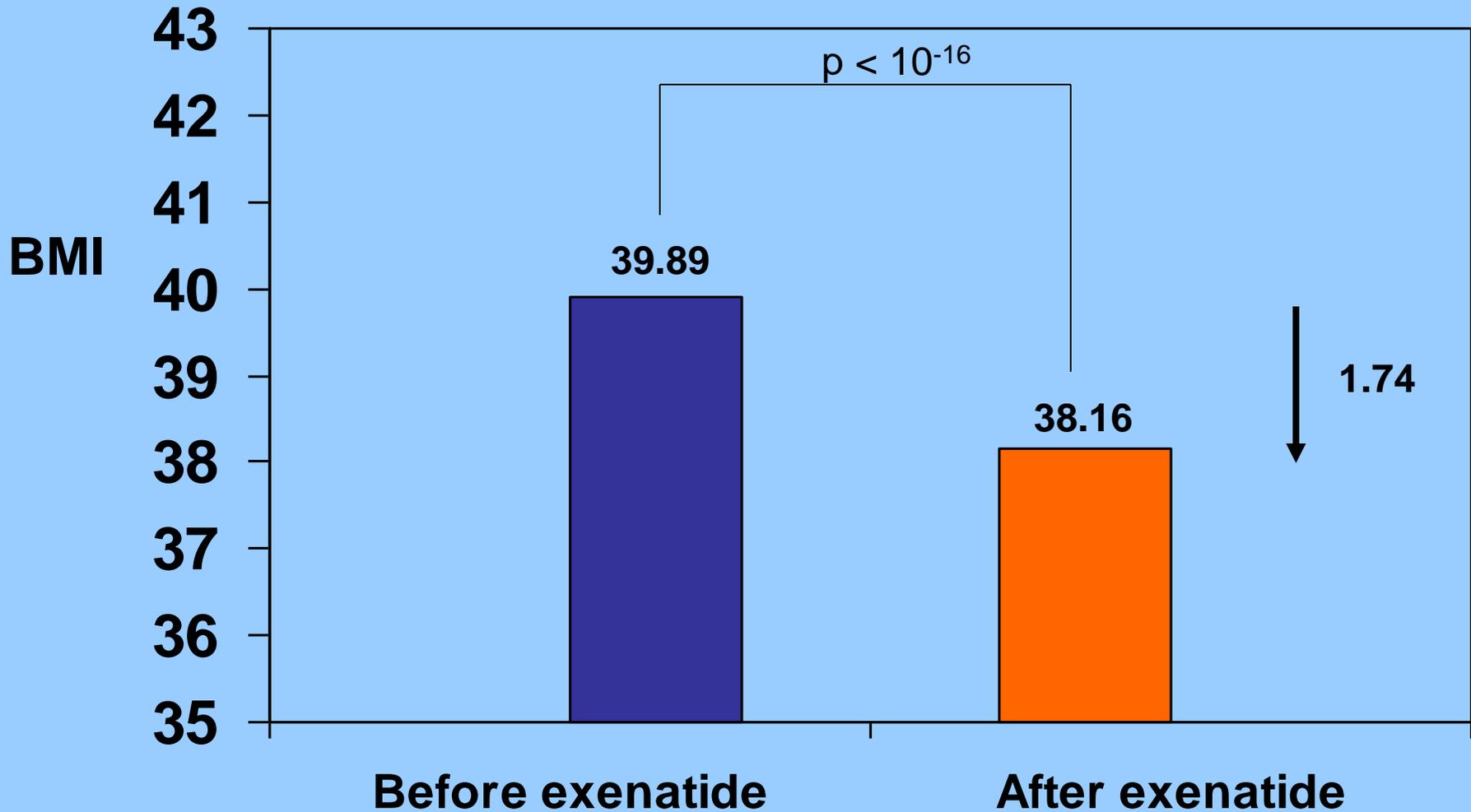
Mean HbA1c before, and last after, exenatide in 3054 patients



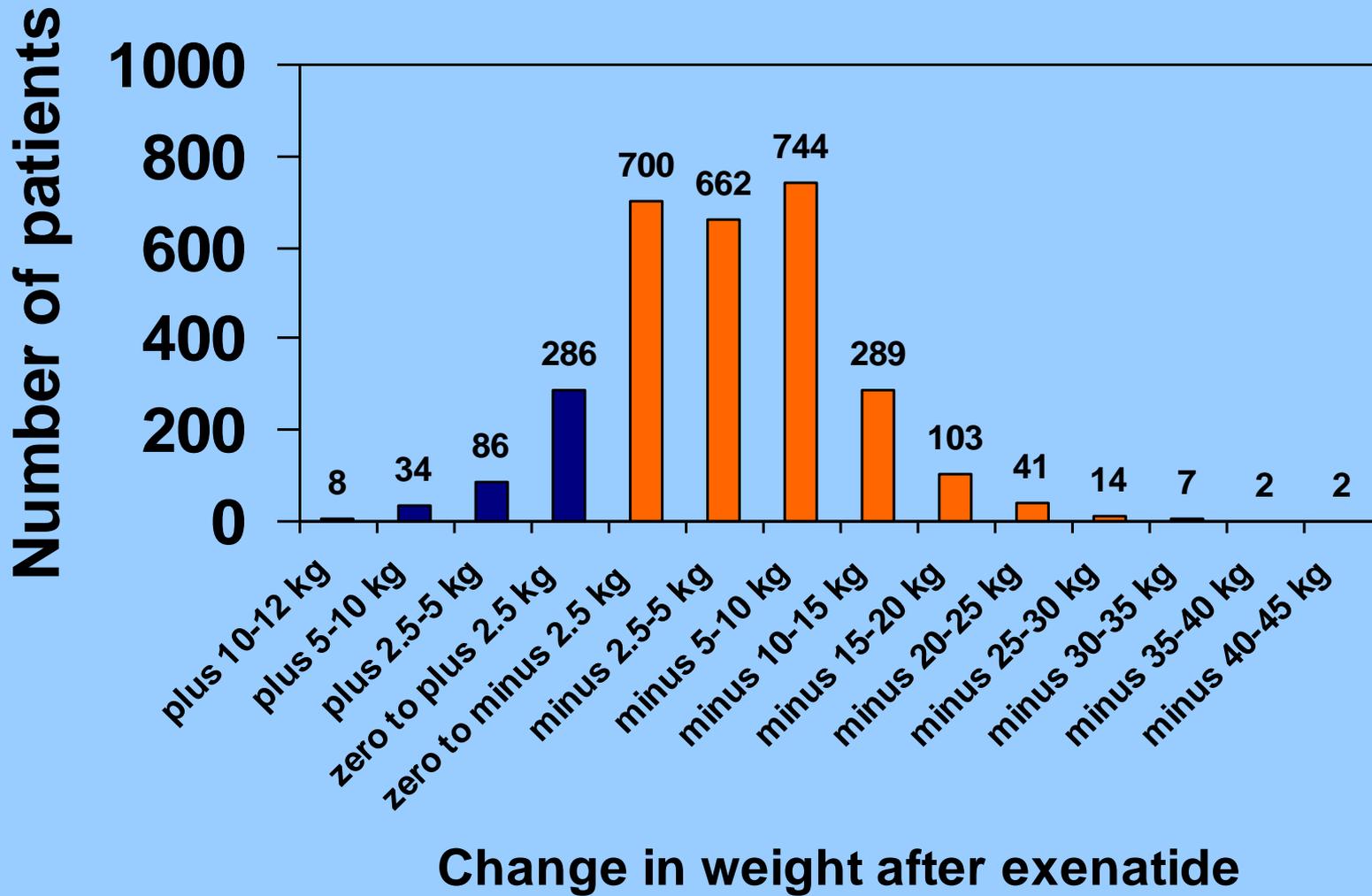
Mean weight before, and last after, exenatide in 2977 patients



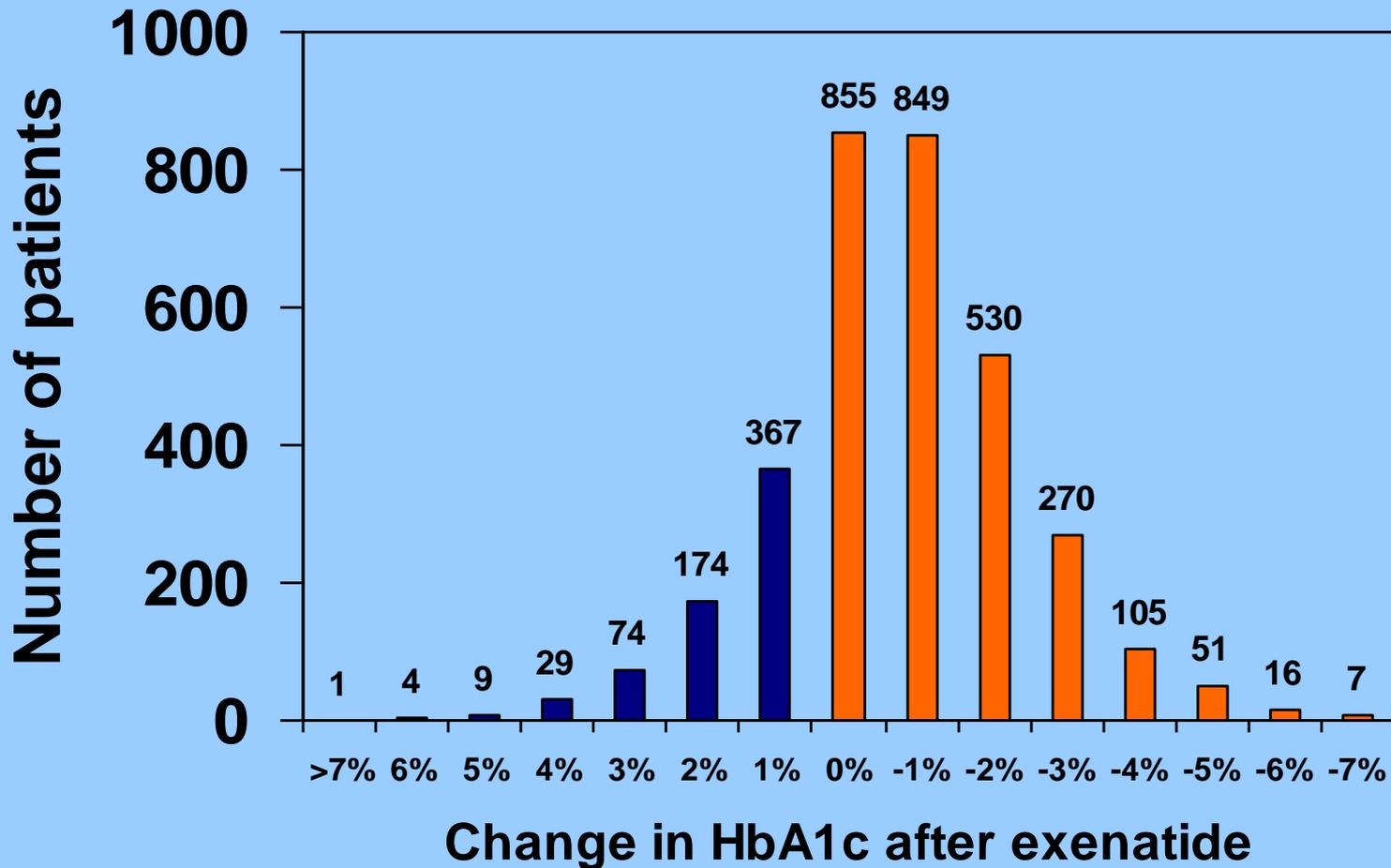
Mean BMI before, and last after, exenatide in 2669 patients



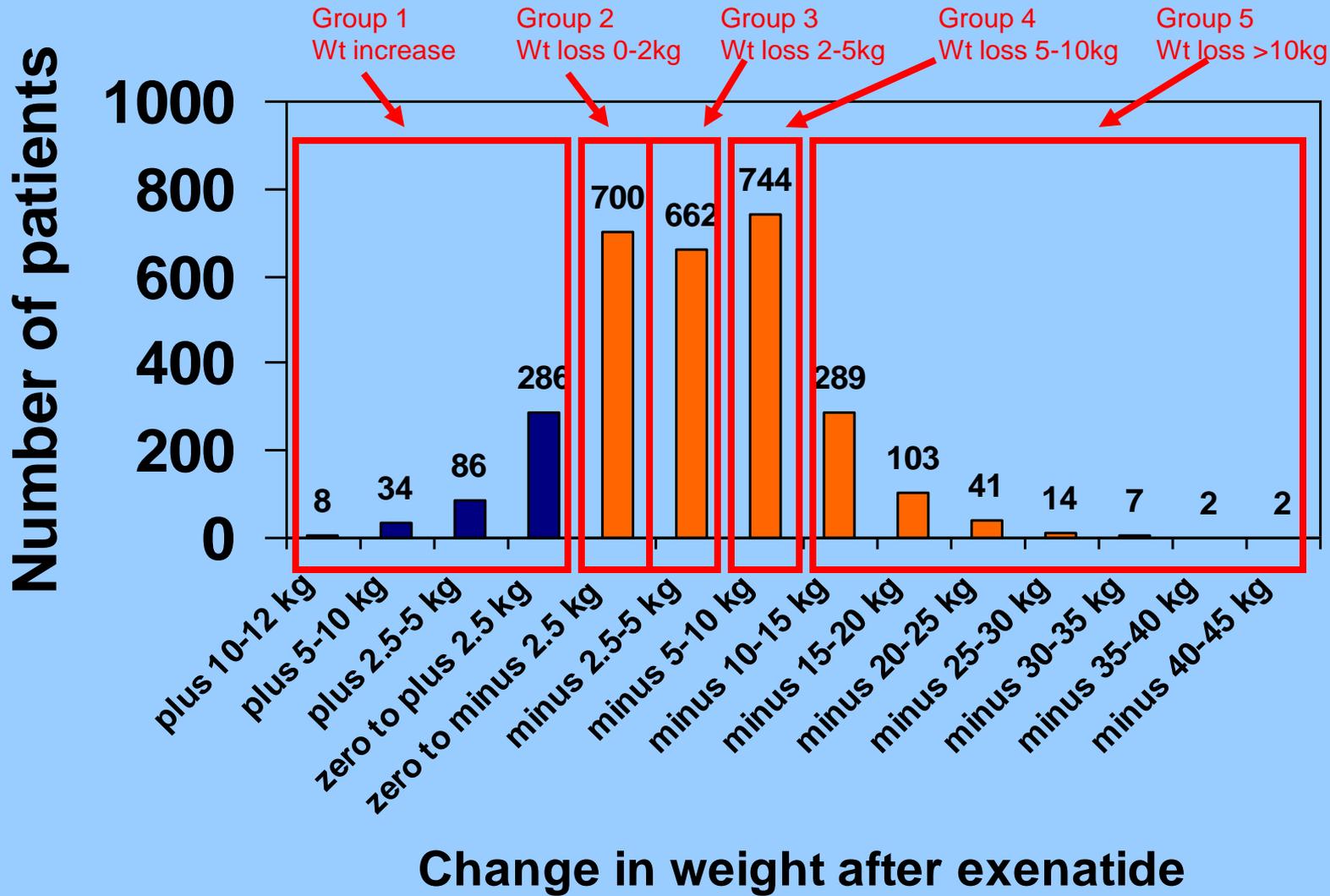
Difference between last weight after exenatide and weight before exenatide



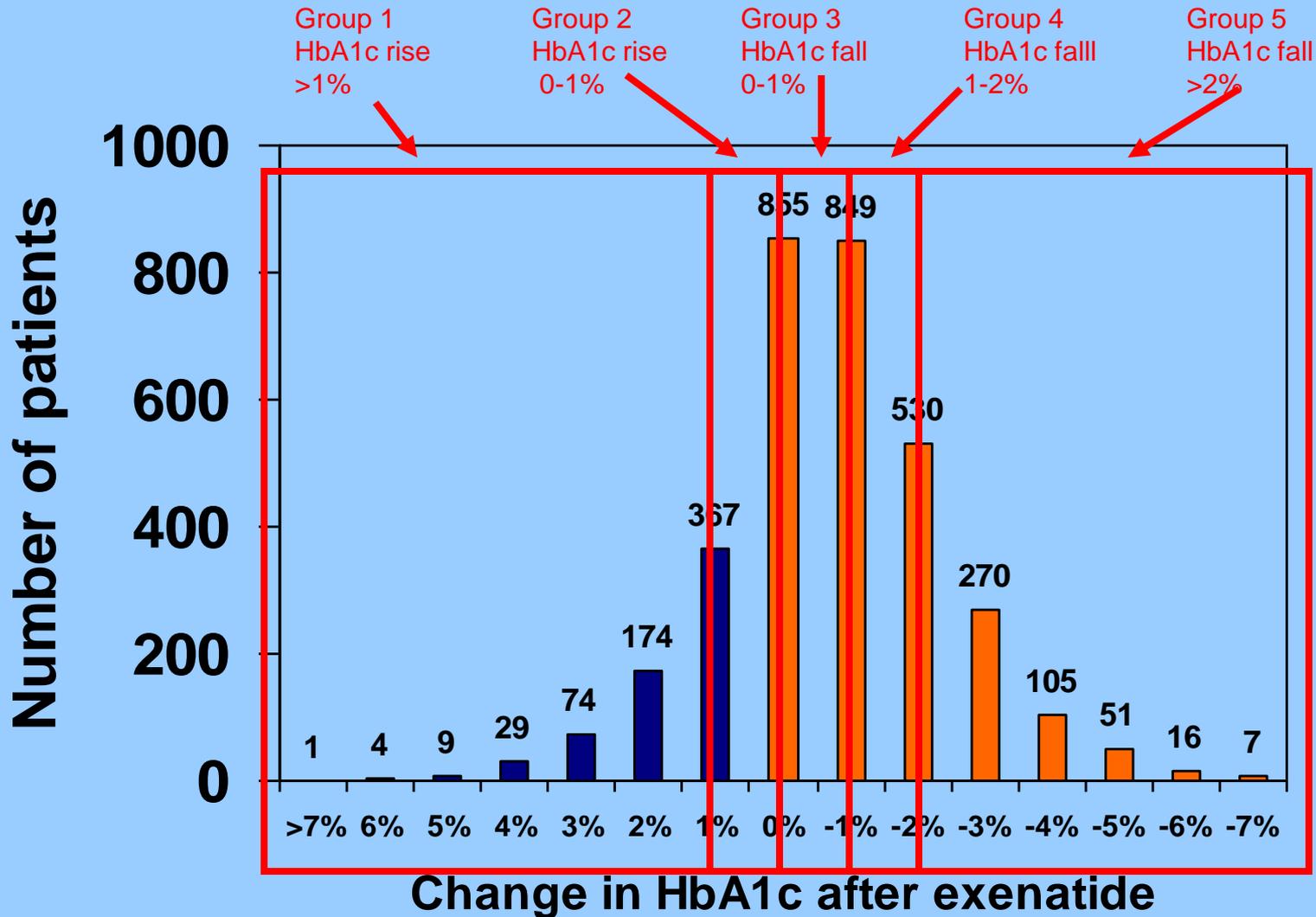
Difference between last HbA1c after exenatide and HbA1c before exenatide



Difference between last weight after exenatide and weight before exenatide



Difference between last HbA1c after exenatide and HbA1c before exenatide



Weight and HbA1c groupings

- Any relationship in terms of response between these groupings and:
 - Initial HbA1c
 - Initial weight
 - BMI
 - Duration DM
 - Age
 - Sex
 - On insulin
 - Insulin stopped
 - Other medication changes
 - Eg glitazones stopped, sulphonylureas stopped, both these stopped

Weight and HbA1c groupings

- Any relationship in terms of response between these groupings and:
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 - Insulin stopped
 - Other medication changes
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Weight and HbA1c groupings

- Any relationship in terms of response between these groupings and:
 - Initial HbA1c
 - Initial weight
 - BMI
 - Duration DM
 - Age
 - Sex
 - On insulin
 - Insulin stopped

Weight groupings

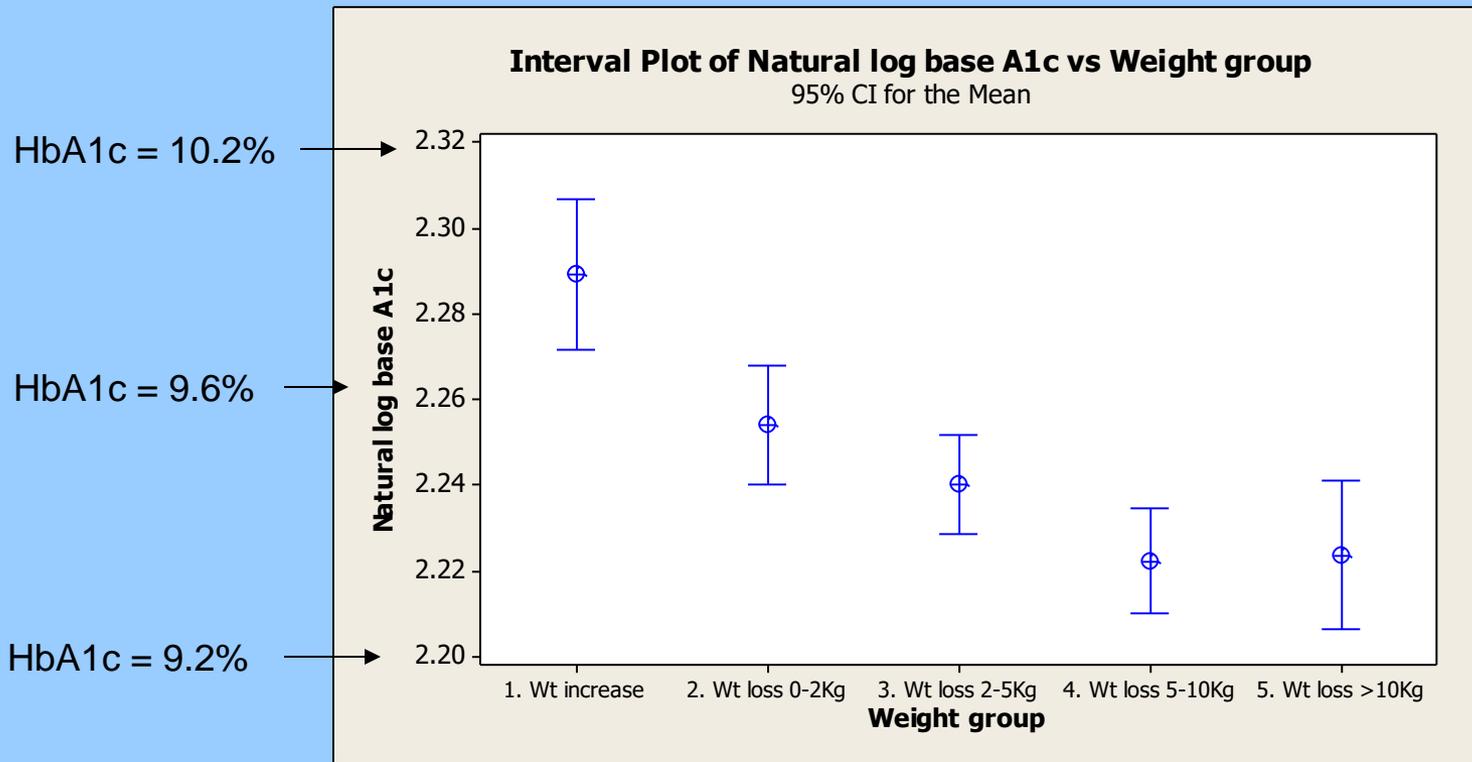


- Any relationship in terms of response between these groupings and:
 - Initial HbA1c
 - Initial weight
 - BMI
 - Duration DM
 - Age
 - Sex
 - On insulin
 - Insulin stopped

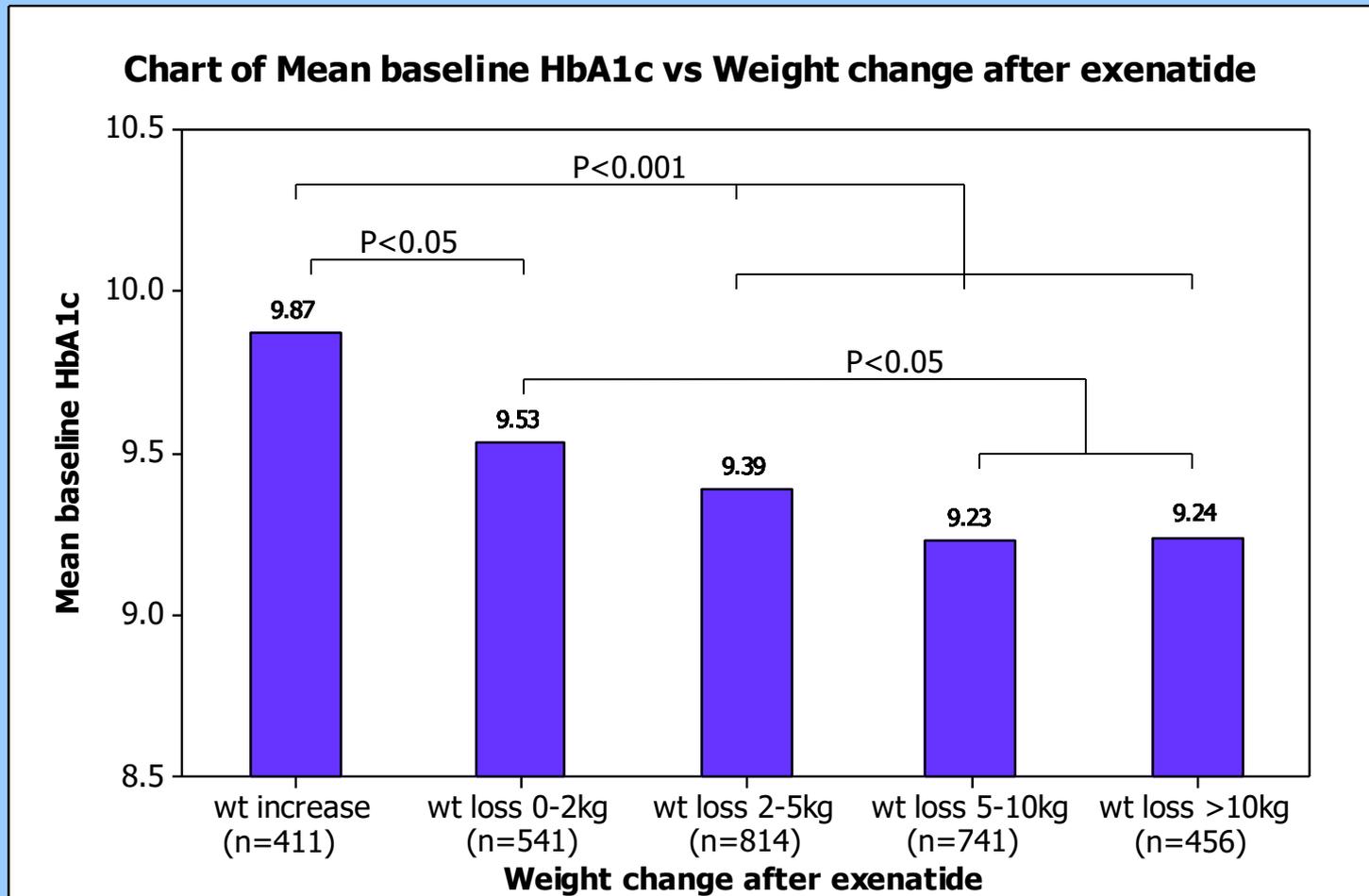
Five weight change groupings

- Group 1 = Weight increase
- Group 2 = Weight loss 0-2Kg
- Group 3 = Weight loss 2-5Kg
- Group 4 = Weight loss 5-10Kg
- Group 5 = Weight loss >10Kg

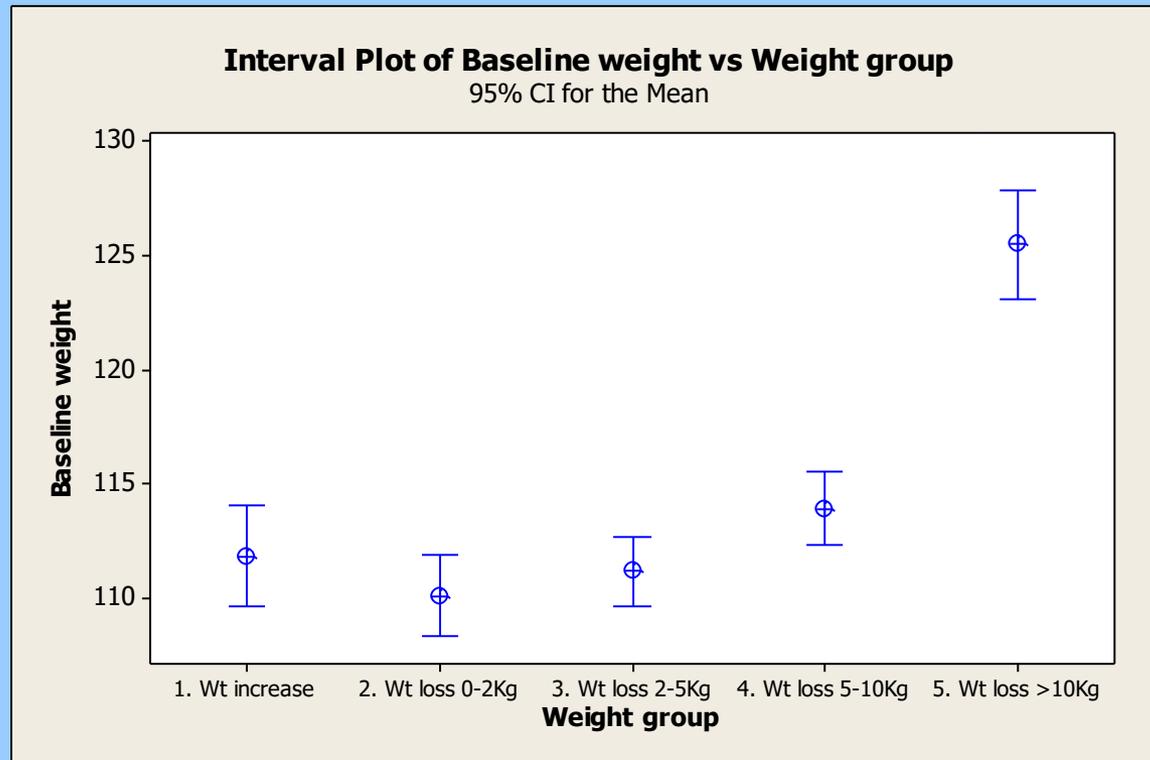
Initial HbA1c in the 5 weight change groupings in 2963 patients



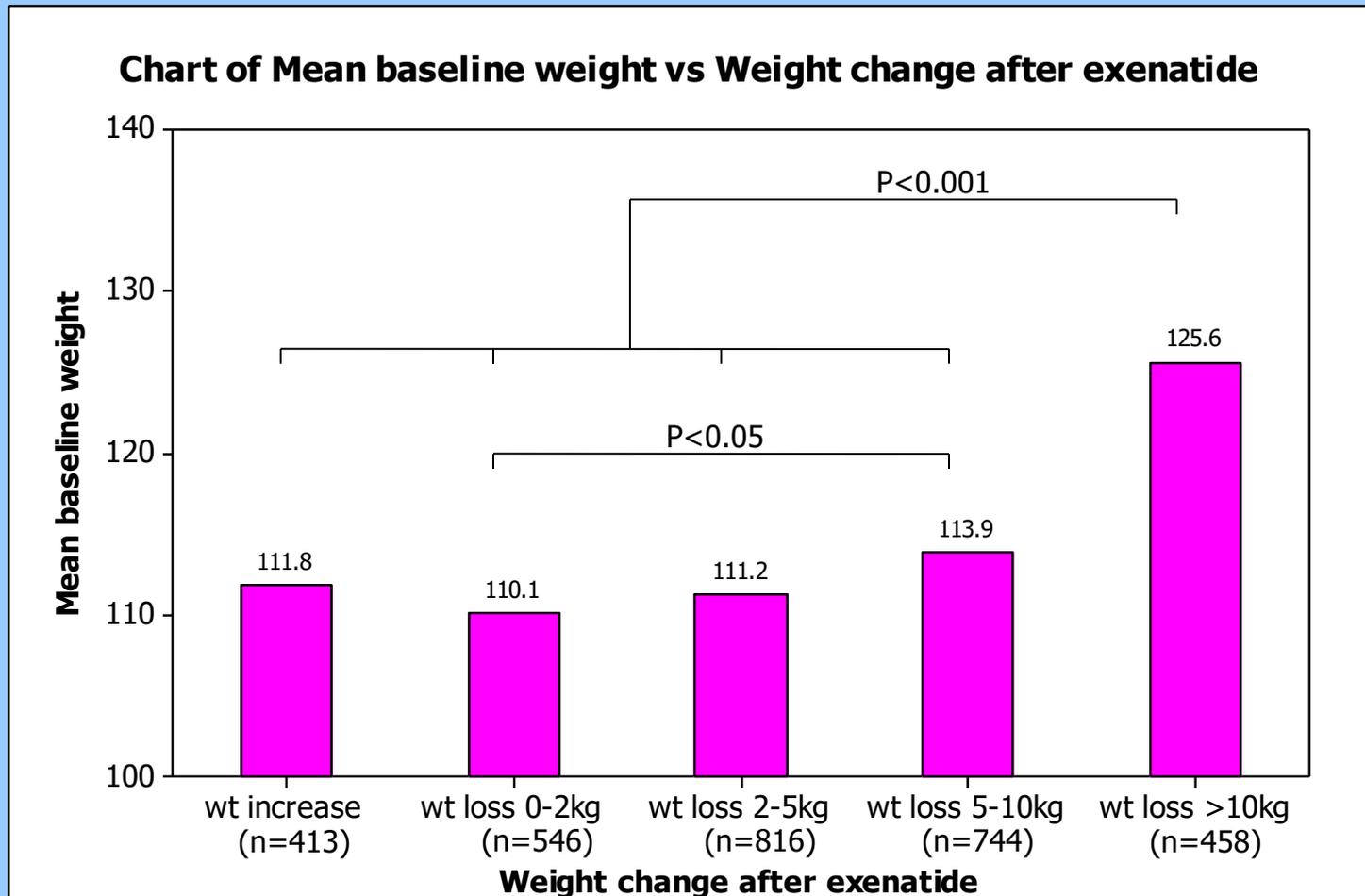
Initial HbA1c in the 5 weight change groupings in 2963 patients



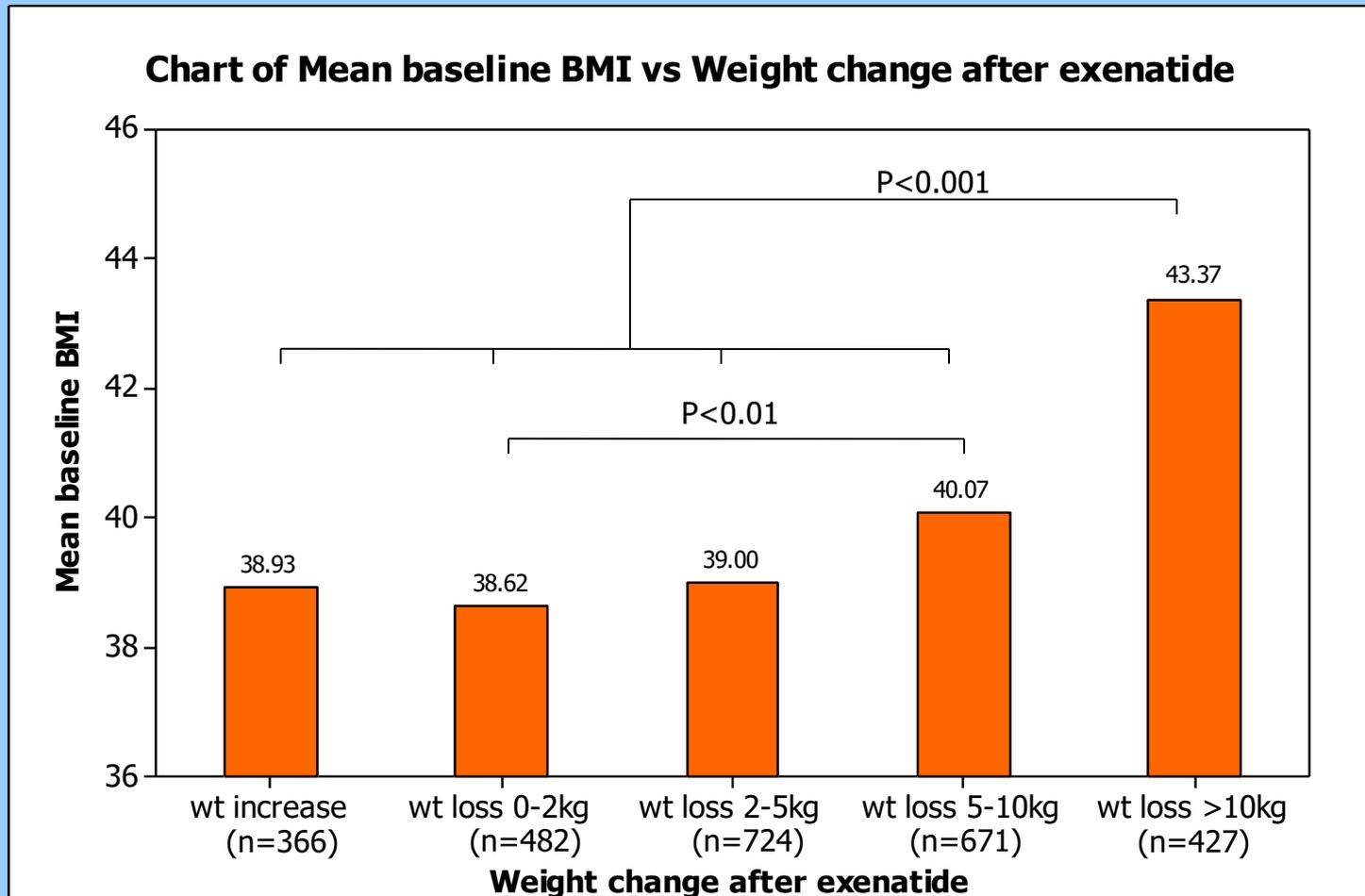
Initial weight in the 5 weight change groupings in 2977 patients



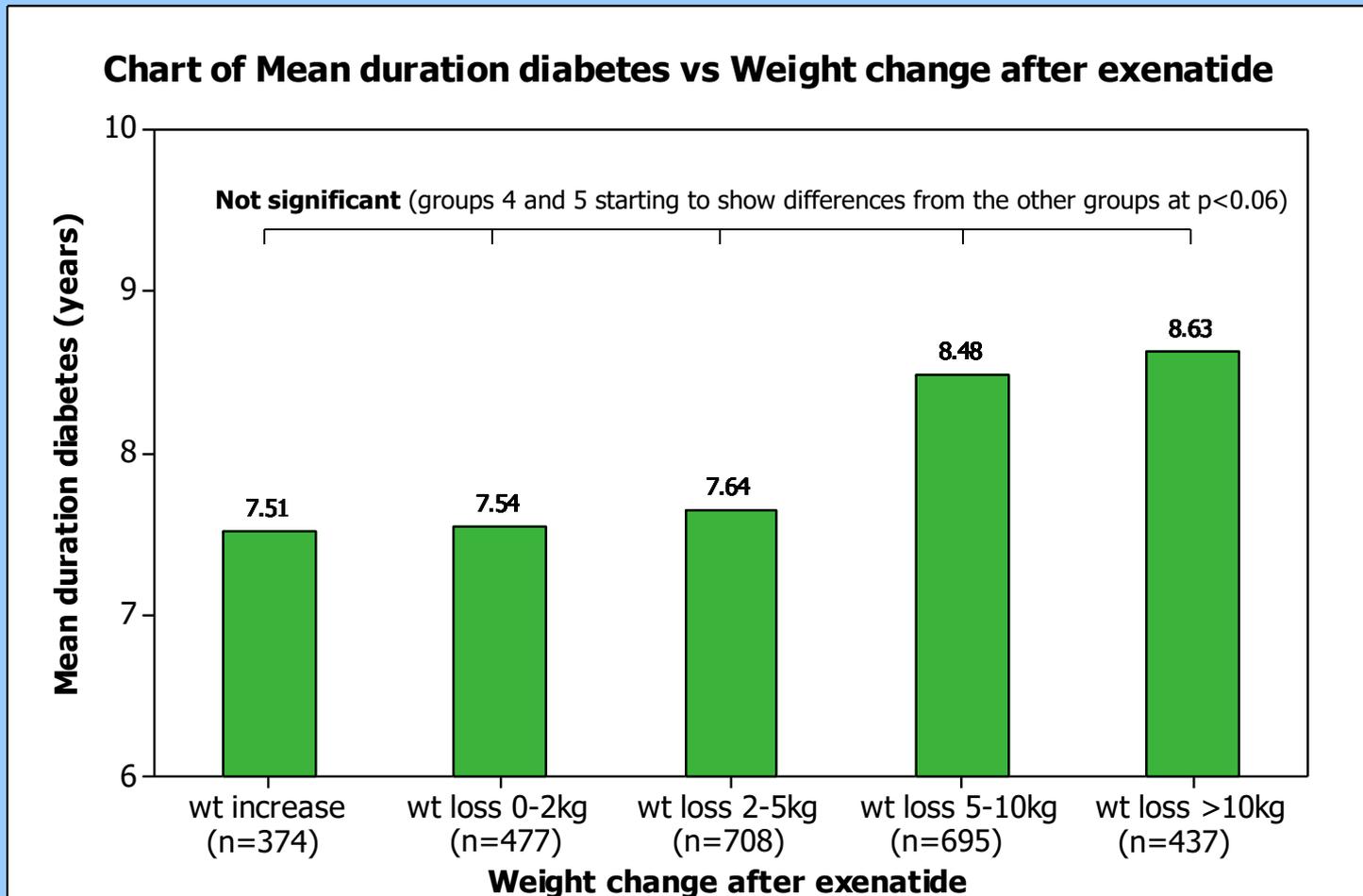
Initial weight in the 5 weight change groupings in 2977 patients



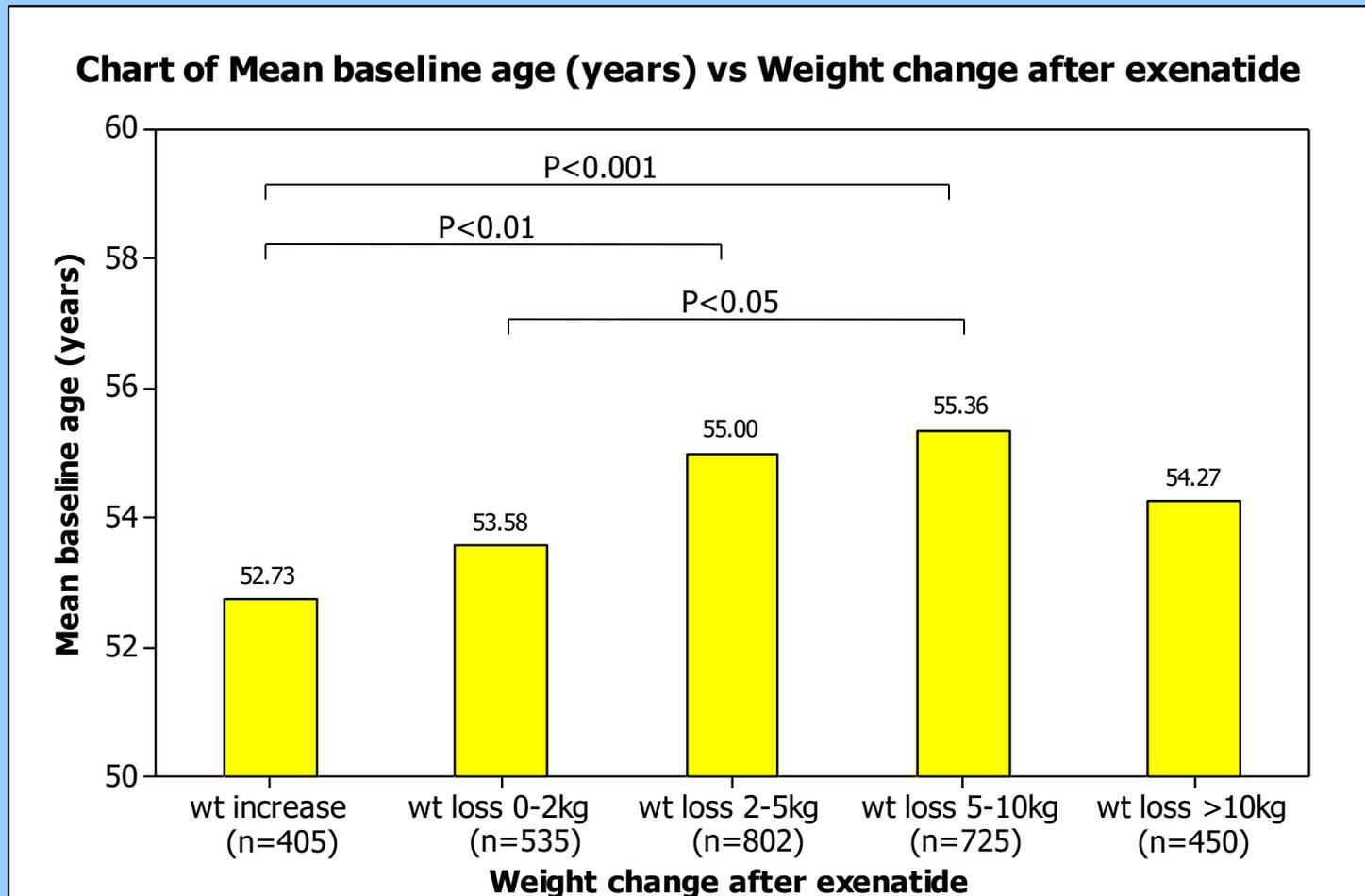
Initial BMI in the 5 weight change groupings in 2670 patients



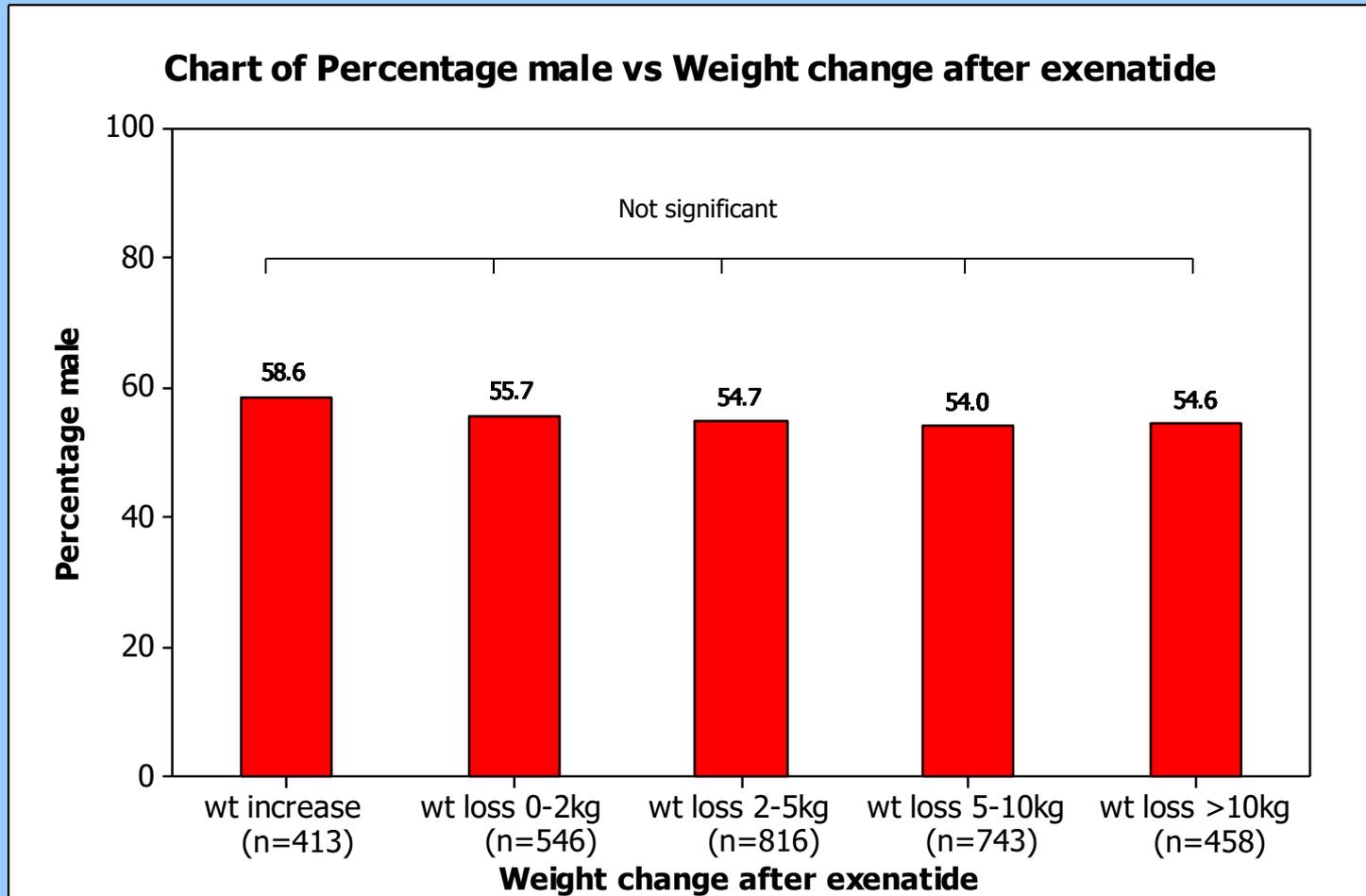
Duration diabetes in the 5 weight change groupings in 2307 patients



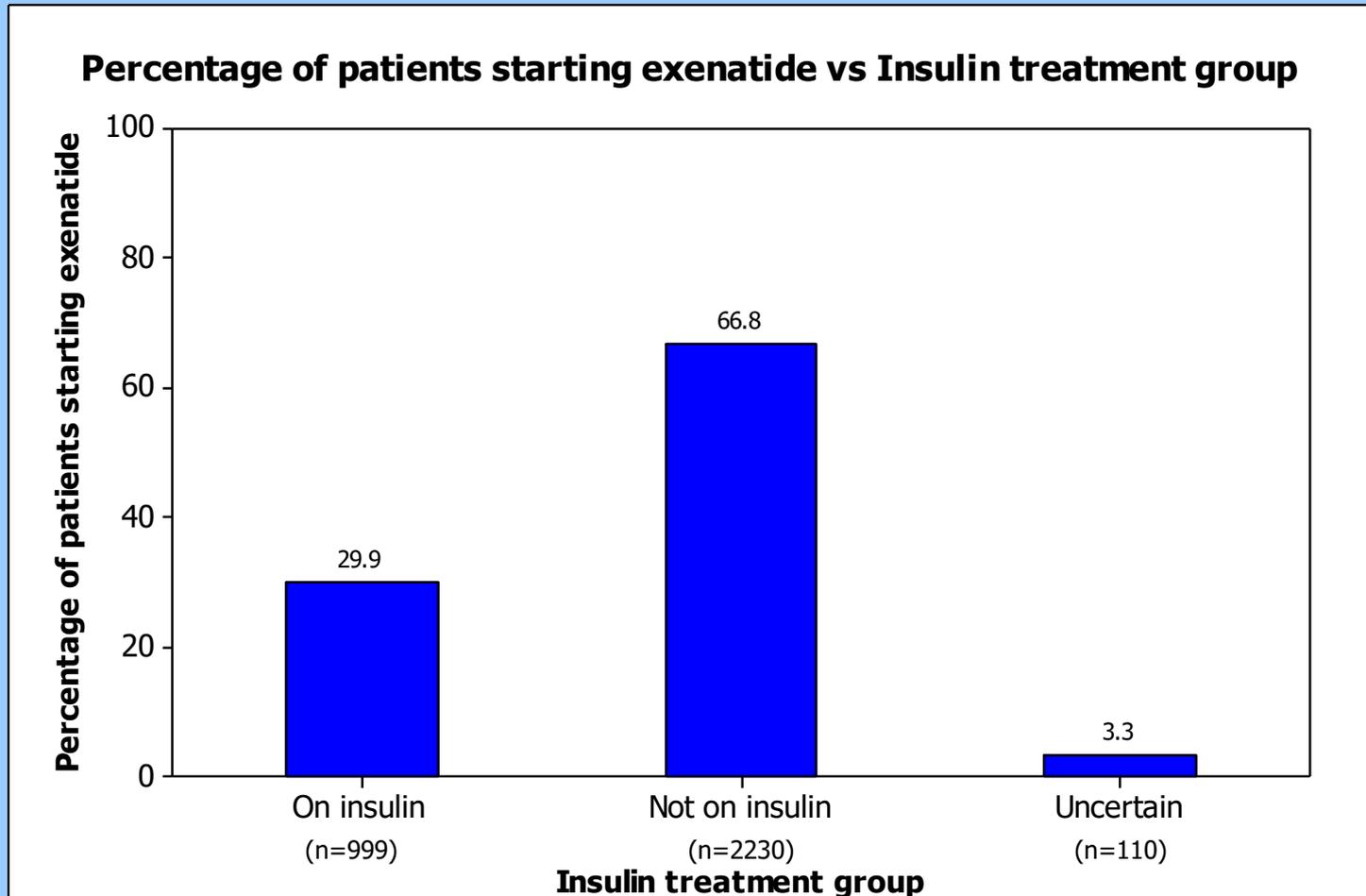
Initial age in the 5 weight change groupings in 2917 patients



Percentage males in the 5 weight change groupings in 2976 patients



On insulin or not before exenatide in 3339 patients

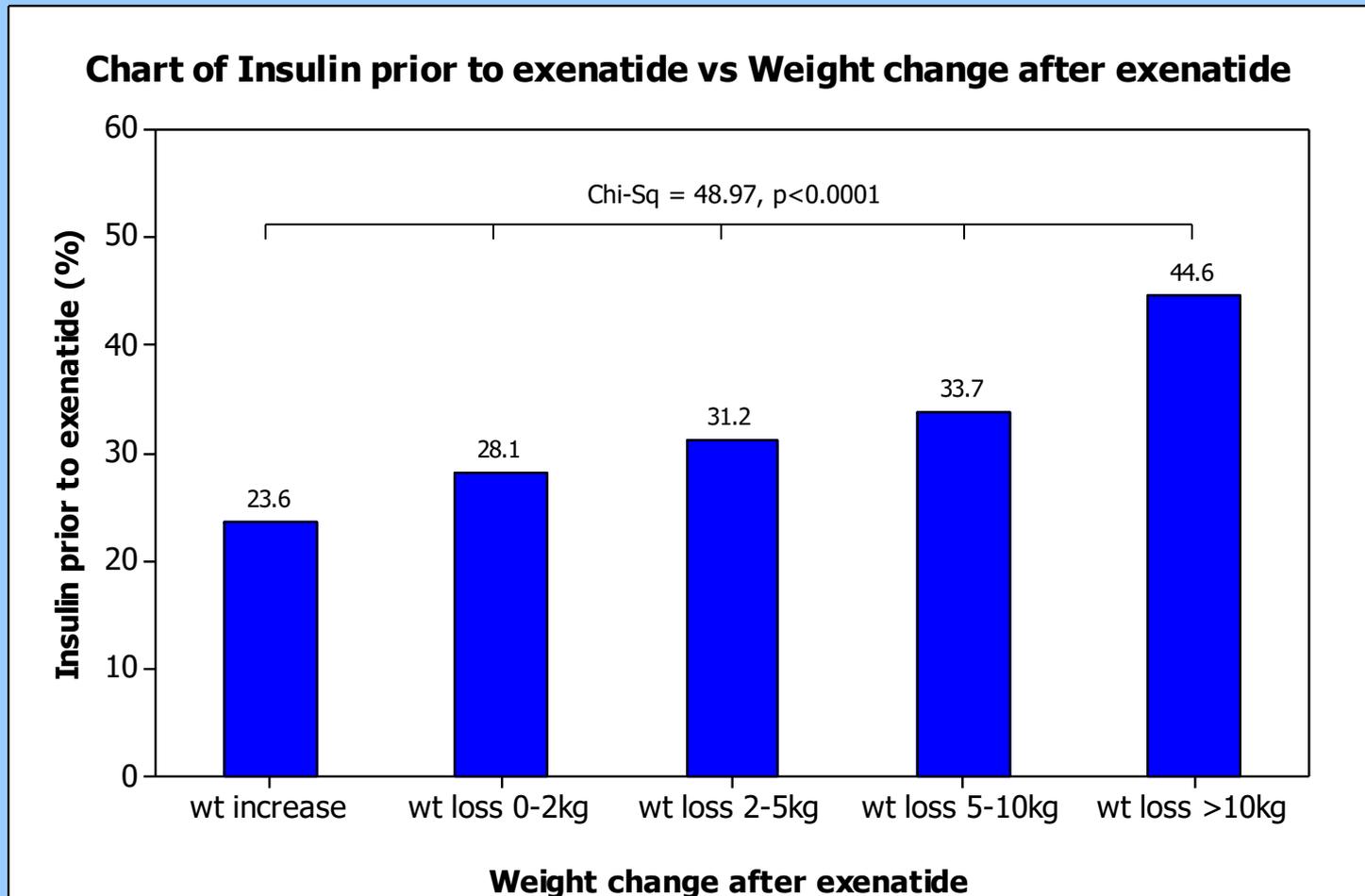


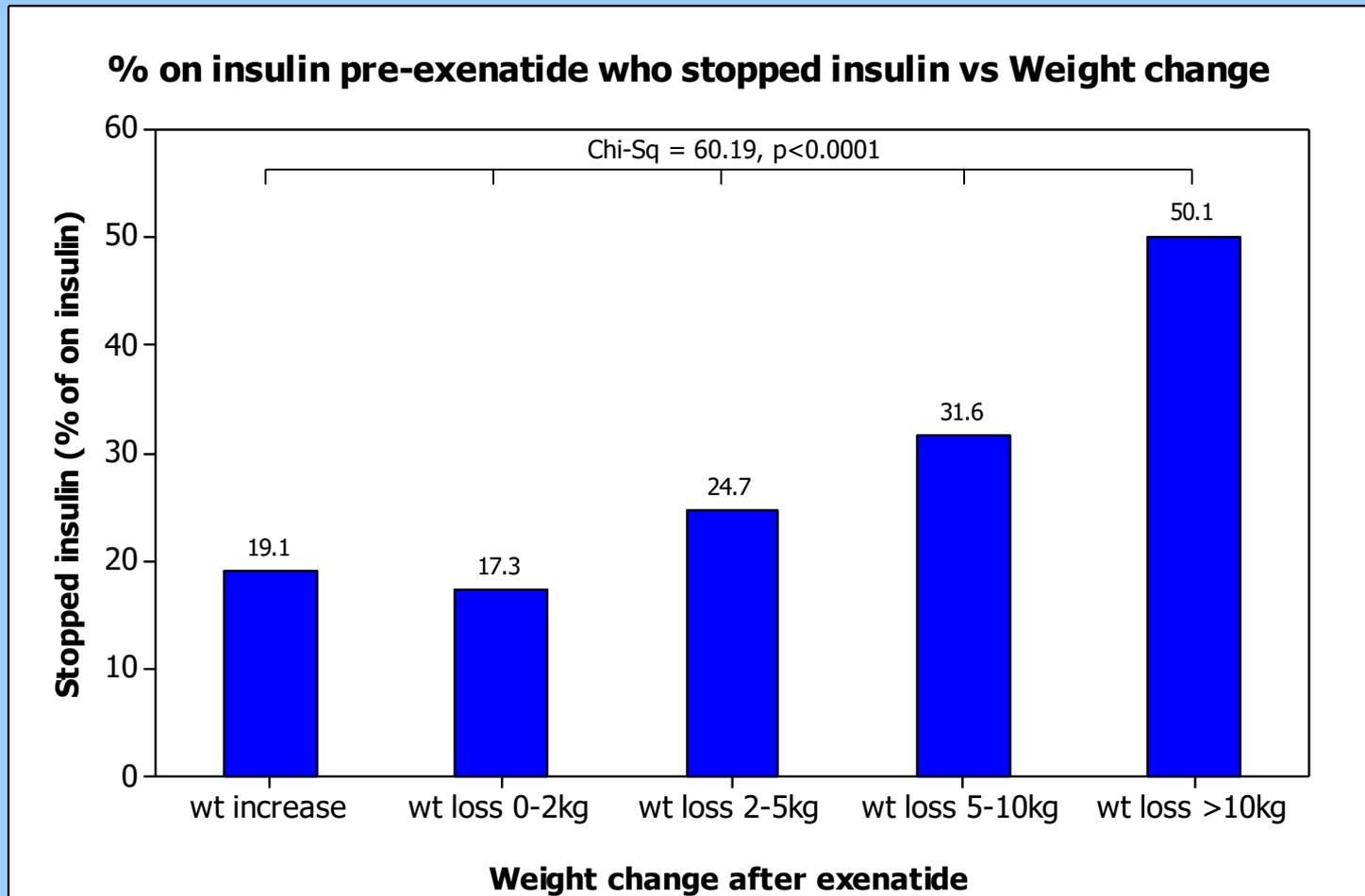
Total number 3340



Code	Category	Number	Percentage
1	Not on insulin	2073	62.1
2	Insulin stopped at start	194	5.8
3	Insulin stopped at start, but restarted	101	3.0
4	Insulin continued at start	704	21.0
5	Not on insulin at start, but added later	157	4.7
6	Uncertain	110	3.3

Percentage on insulin pre-exenatide in the 5 weight change groupings in 2897 patients





In summary so far



- Those who increase weight, or with lesser degrees of weight loss after exenatide, tend to have higher initial HbA1c, lower initial weight and BMI and lower age. They are less likely to be on insulin and if on insulin are less likely to have had it stopped.
- Those who lose a large amount of weight after exenatide tend to a lower initial HbA1c, higher initial weight and BMI, slightly longer duration diabetes. They are more likely to have been on insulin and are more likely to have had the insulin stopped.

Anecdote 3:

One of the reasons for weight increase on exenatide?



Female, age 50, on exenatide for 15 months. Previously on pioglitazone and gliclazide

	Before Exenatide	After Exenatide
Data	HbA1c = 12 Wt = 121 BMI = 42.5	HbA1c = 6.8 Wt = 128 Kg BMI = 44.8
Weight loss		-6.7kg
HbA1c fall		5.2%
Comment	Before exenatide had thirst, polyuria, very tired and thrush. Weight increase may be because weight was low due to poor glycaemic control pre exenatide.	

•Those who increase weight after exenatide tend to have higher initial HbA1c, lower initial weight and BMI, lower age. They are less likely to be on insulin and if on insulin are less likely to have had it stopped



Female, age 50, on exenatide for 15 months. Previously on pioglitazone and gliclazide

	Before Exenatide	After Exenatide
Data	HbA1c = 12 Wt = 121 BMI = 42.5	HbA1c = 6.8 Wt = 128 Kg BMI = 44.8
Weight loss		-6.7kg
HbA1c fall		5.2%
Comment	Before exenatide had thirst, polyuria, very tired and thrush. Weight increase may be because weight was low due to poor glycaemic control pre exenatide.	

Anecdote 1: T2DM & Polycystic ovary syndrome



Female, age 35, T2DM , on exenatide for 15 months. Insulin was reduced.

	Before Exenatide	After Exenatide
Data	HbA1c = 5.7 Wt = 109.2 BMI = 37.8	HbA1c = 5.8 92 Kg BMI = 34.6
Weight loss		17.2kg
HbA1c fall		-0.1%
Comment	On exenatide periods have returned.	

•Those who lose a lot of weight after exenatide tend to a lower initial HbA1c, higher initial weight and BMI, slightly longer duration diabetes. They are more likely to have been on insulin and are more likely to have had the insulin stopped



Female, age 35, T2DM, on exenatide for 15 months. Insulin was reduced.

	Before Exenatide	After Exenatide
Data	HbA1c = 5.7 Wt = 109.2 BMI = 37.8	HbA1c = 5.8 92 Kg BMI = 34.6
Weight loss		17.2kg
HbA1c fall		-0.1%
Comment	On exenatide periods have returned.	

Anecdote 2: T2DM & Obstructive Sleep Apnoea



Female, age 67, on exenatide/metformin for 15 months
Prior to exenatide on pioglitazone/metformin

	Before Exenatide	After Exenatide
Data	HbA1c = 9.6 Wt = 168.4 BMI = 71.9	HbA1c = 6.5 Wt = 125.2Kg BMI = 53.5
Weight loss		43.2 kg
HbA1c fall		3.1%
Comment	Reported an improvement in her breathing and symptoms of obstructive sleep apnoea	

•Those who lose a lot of weight after exenatide tend to a lower initial HbA1c, higher initial weight and BMI, slightly longer duration diabetes. They are more likely to have been on insulin and are more likely to have had the insulin stopped



Female, age 67, on exenatide/metformin for 15 months
Prior to exenatide on pioglitazone/metformin

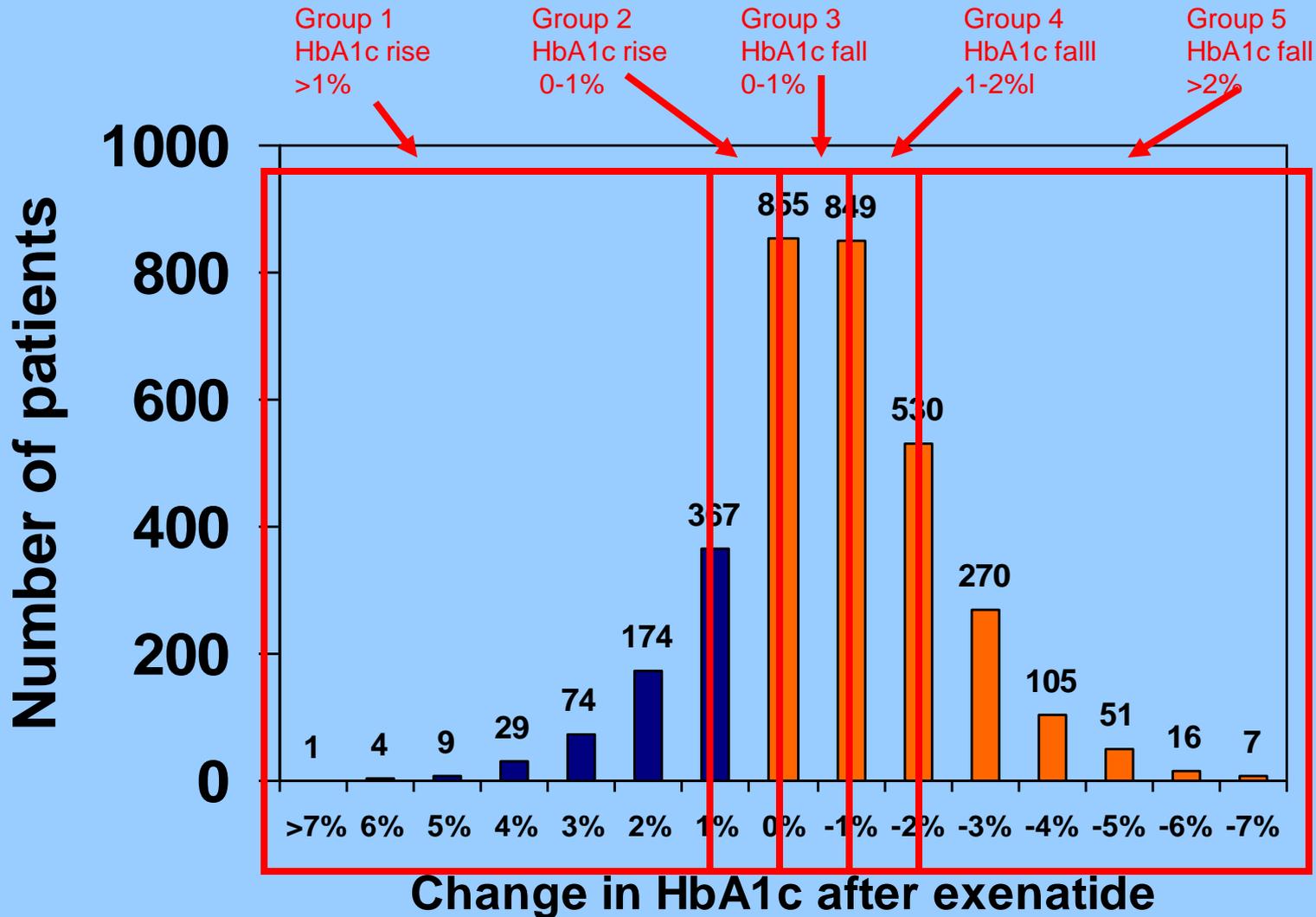
	Before Exenatide	After Exenatide
Data	HbA1c = 9.6 Wt = 168.4 BMI = 71.9	HbA1c = 6.5 Wt = 125.2Kg BMI = 53.5
Weight loss		43.2 kg
HbA1c fall		3.1%
Comment	Reported an improvement in her breathing and symptoms of obstructive sleep apnoea	

HbA1c groupings



- Any relationship in terms of response between these groupings and:
 - Initial HbA1c
 - Initial weight
 - BMI
 - Duration DM
 - Age
 - Sex
 - On insulin
 - Insulin stopped

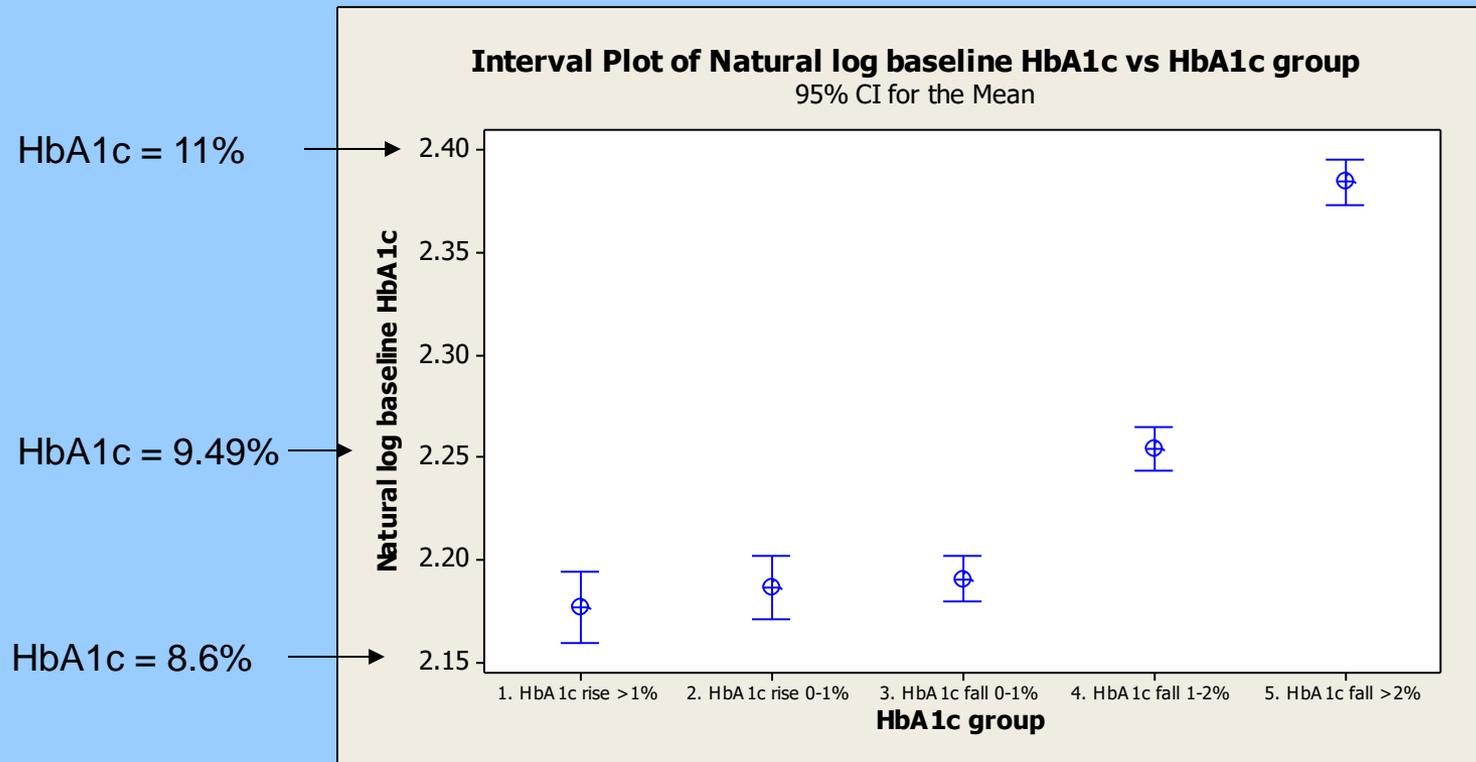
Difference between last HbA1c after exenatide and HbA1c before exenatide



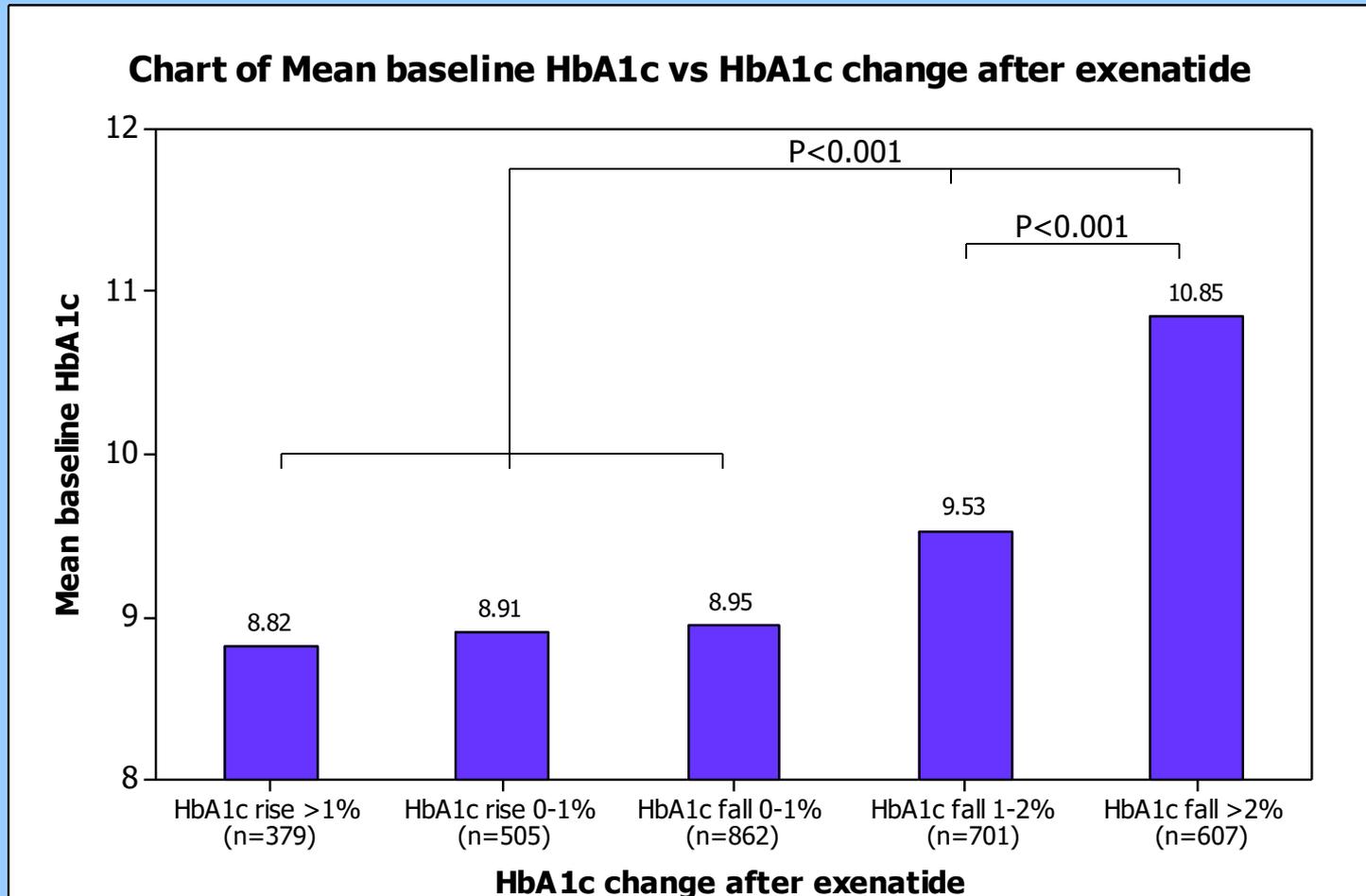
Five HbA1c change groupings

- Group 1 = HbA1c rise $>1\%$
- Group 2 = HbA1c rise 0-1%
- Group 3 = HbA1c fall 0-1%
- Group 4 = HbA1c fall 1-2%
- Group 5 = HbA1c fall $>2\%$

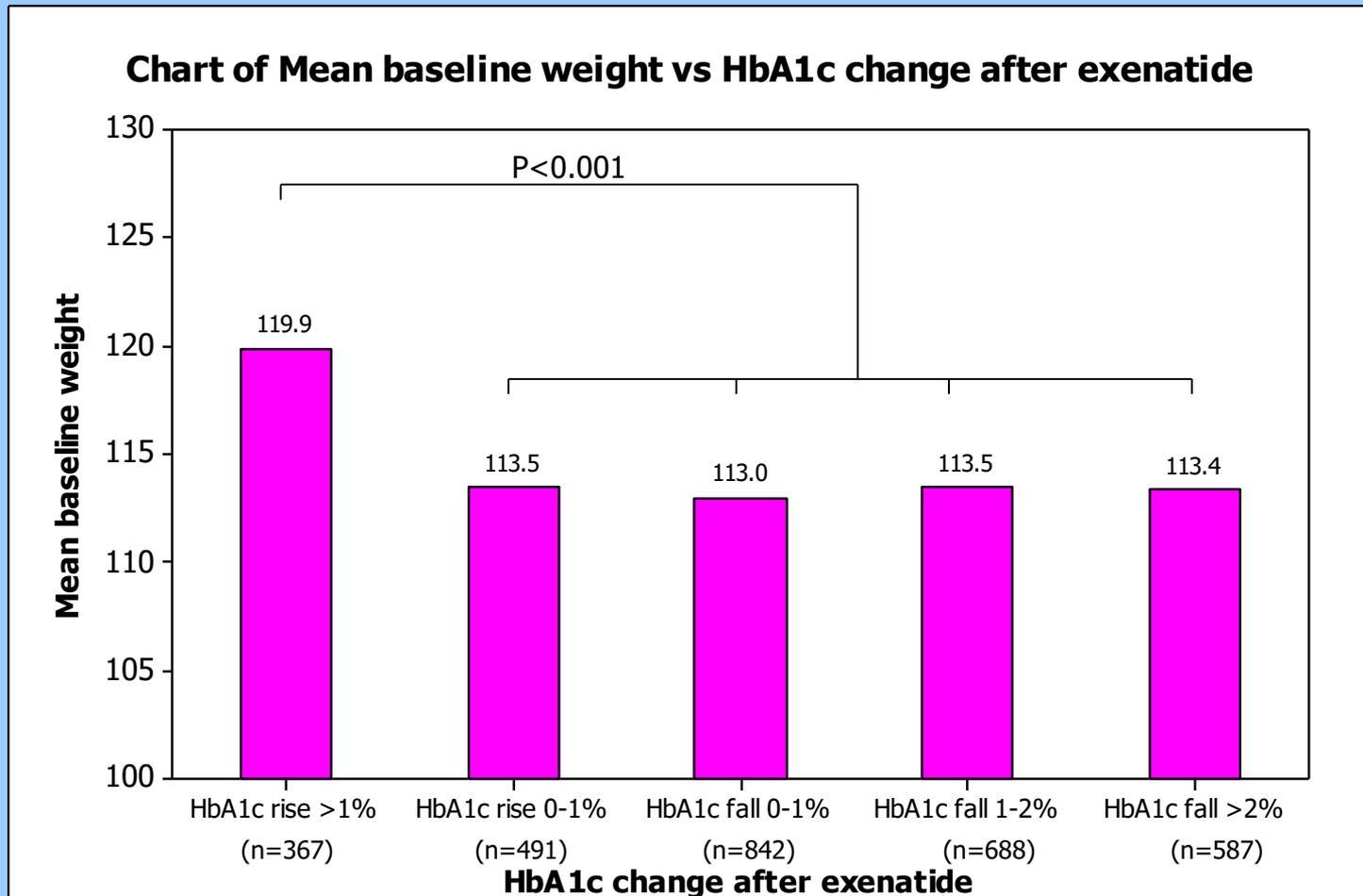
Initial HbA1c in the 5 HbA1c change groupings in 3054 patients



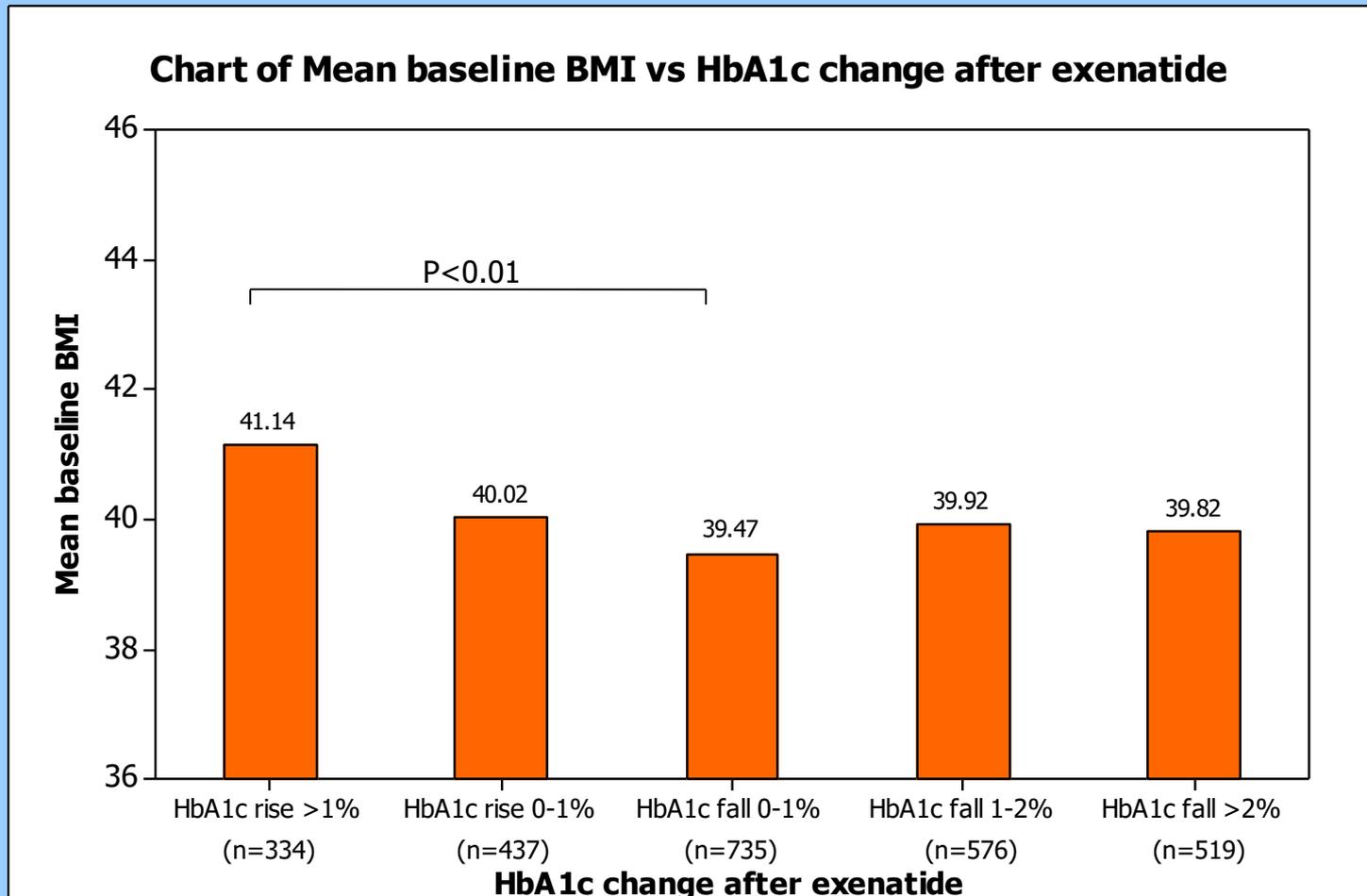
Initial HbA1c in the 5 HbA1c change groupings in 3054 patients



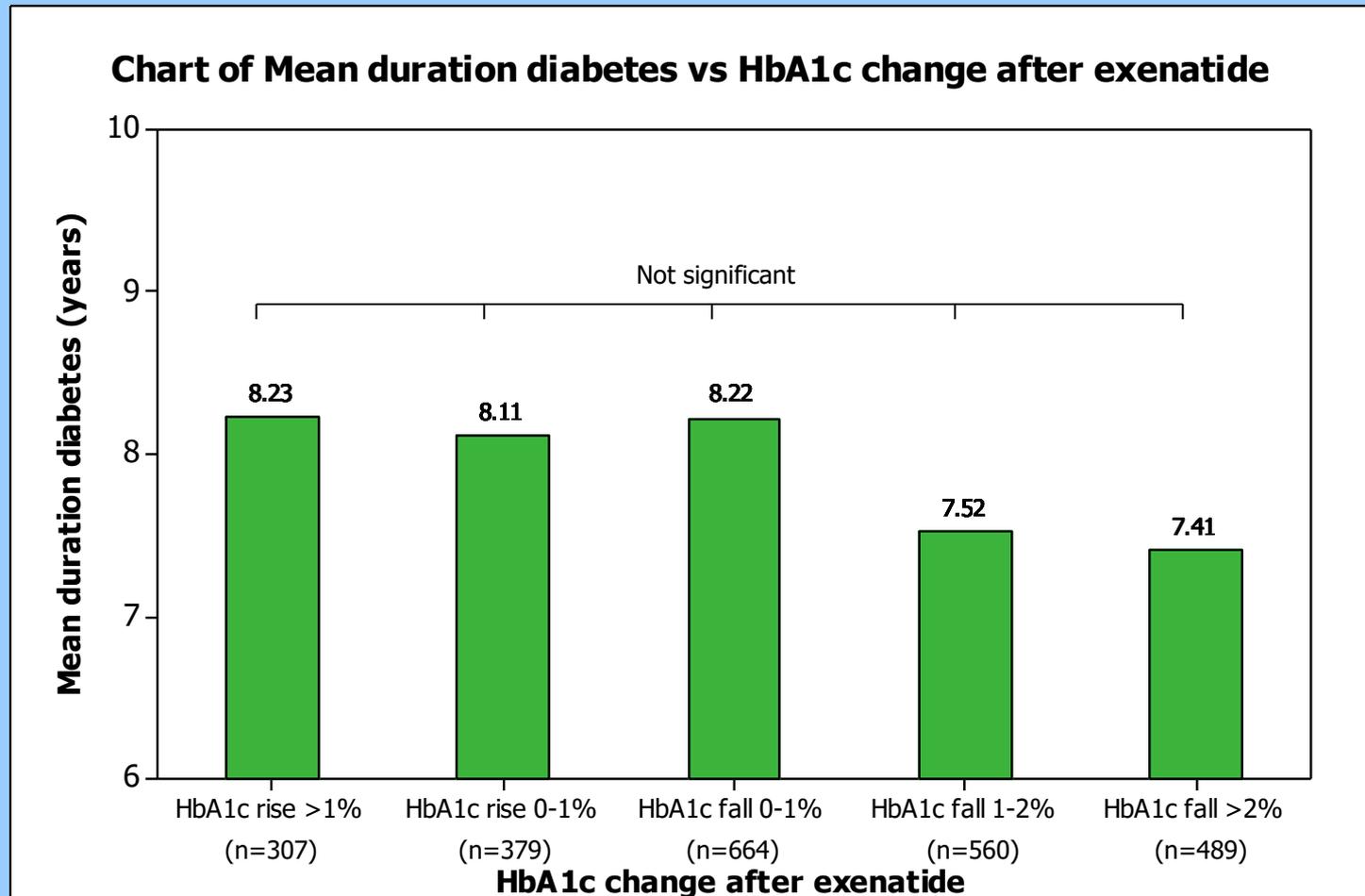
Initial weight in the 5 HbA1c change groupings in 2975 patients



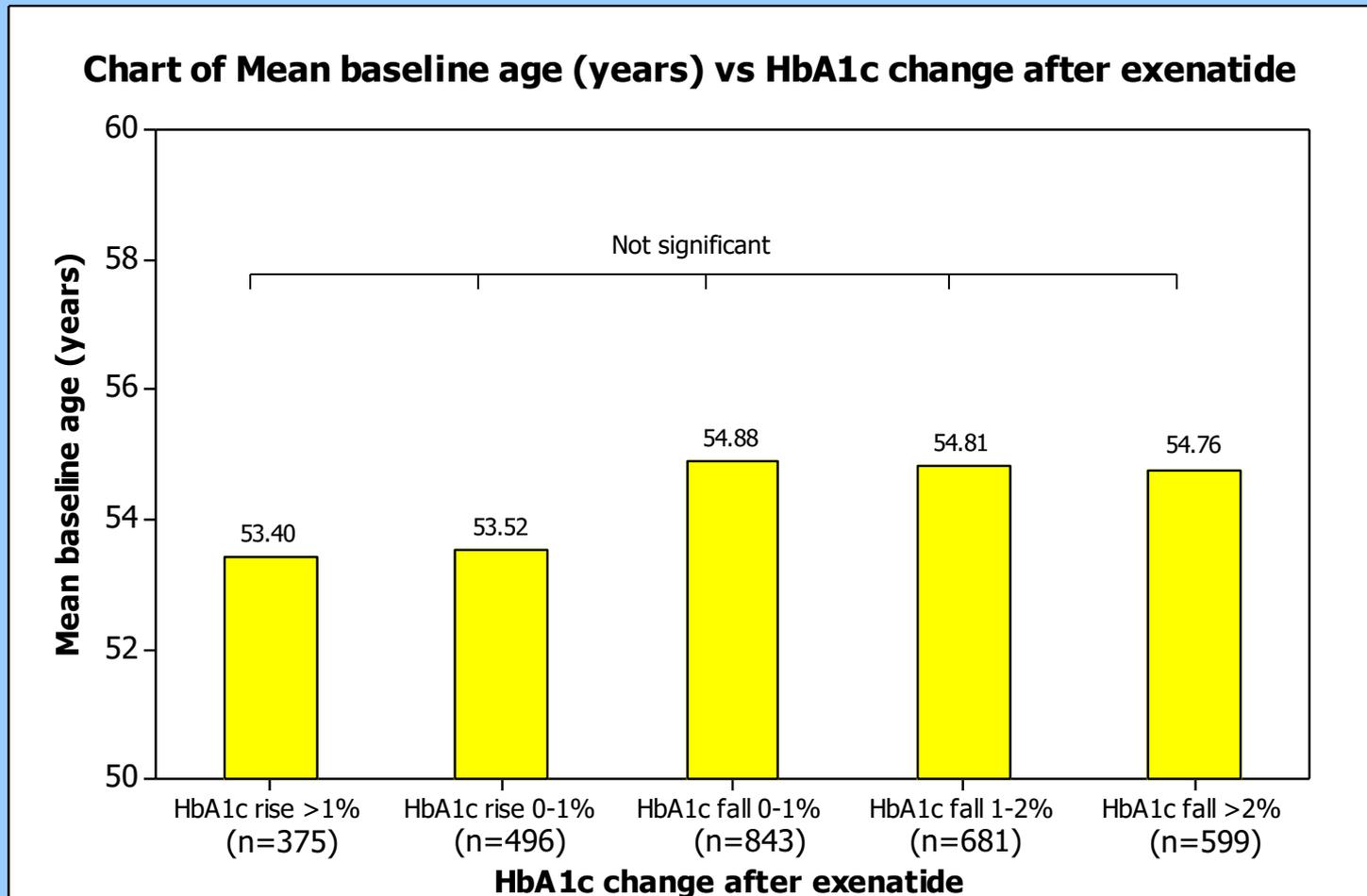
Initial BMI in the 5 HbA1c change groupings in 2601 patients



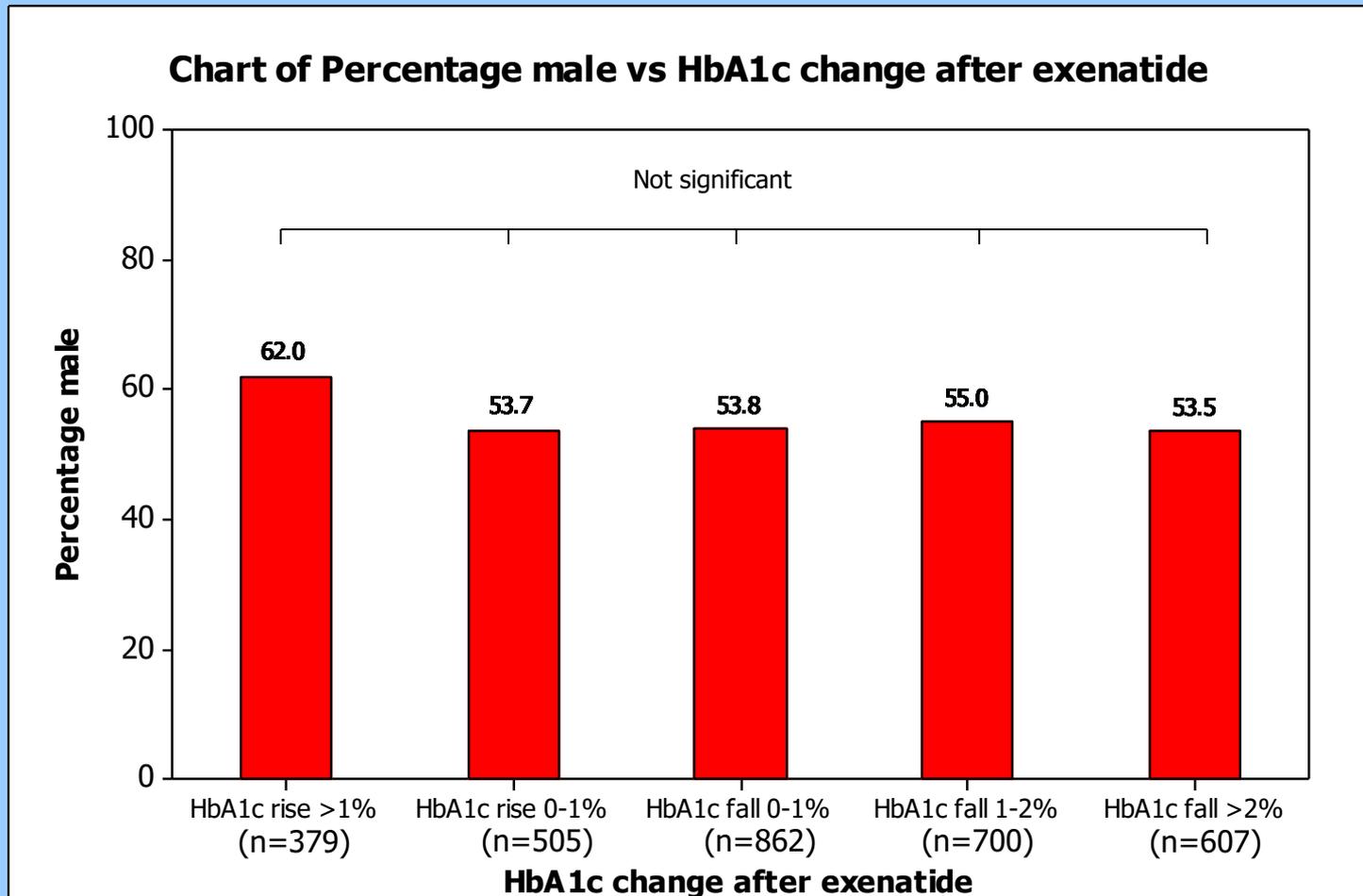
Duration diabetes in the 5 HbA1c change groupings in 2399 patients



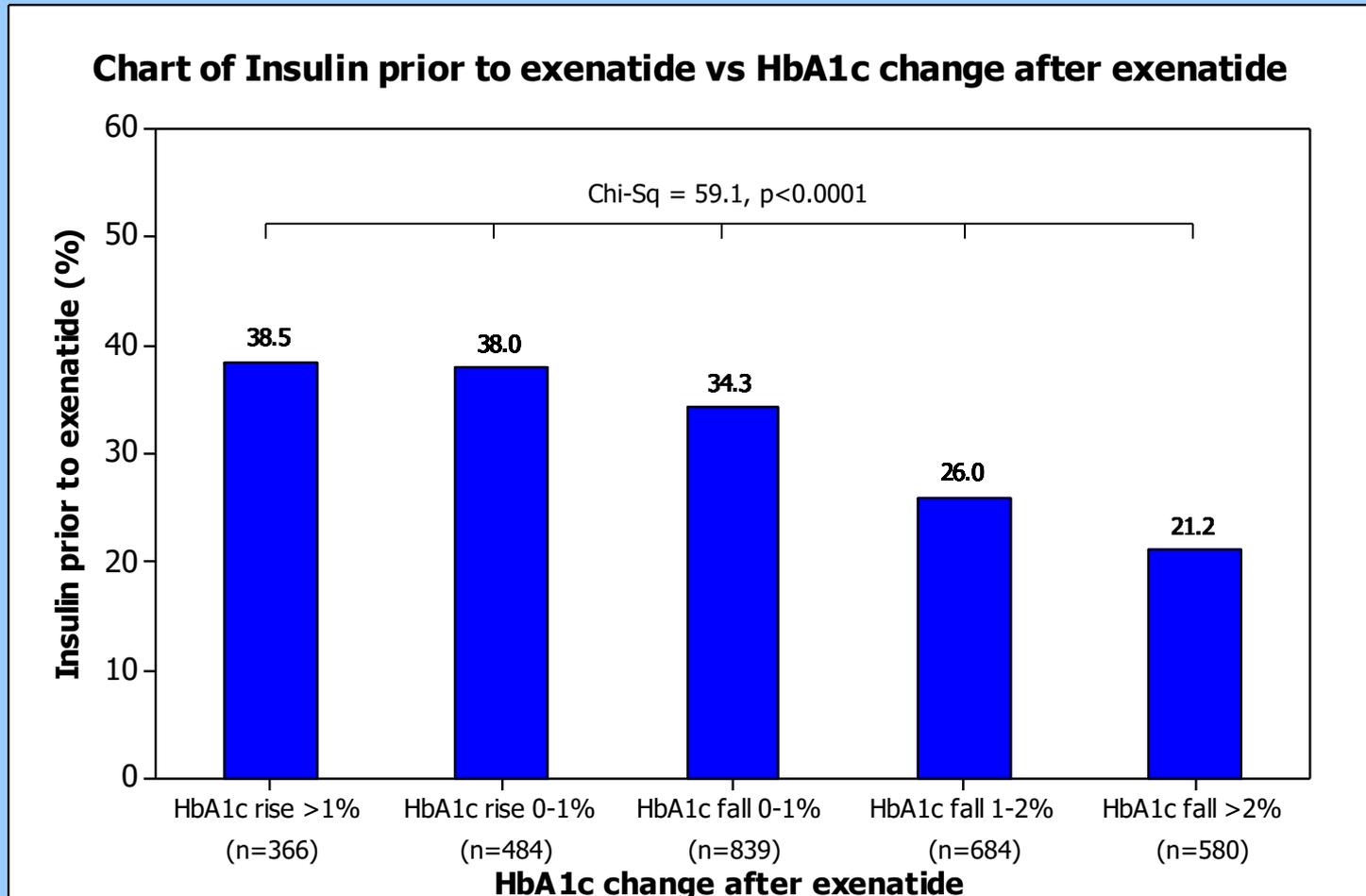
Initial age in the 5 HbA1c change groupings in 2994 patients



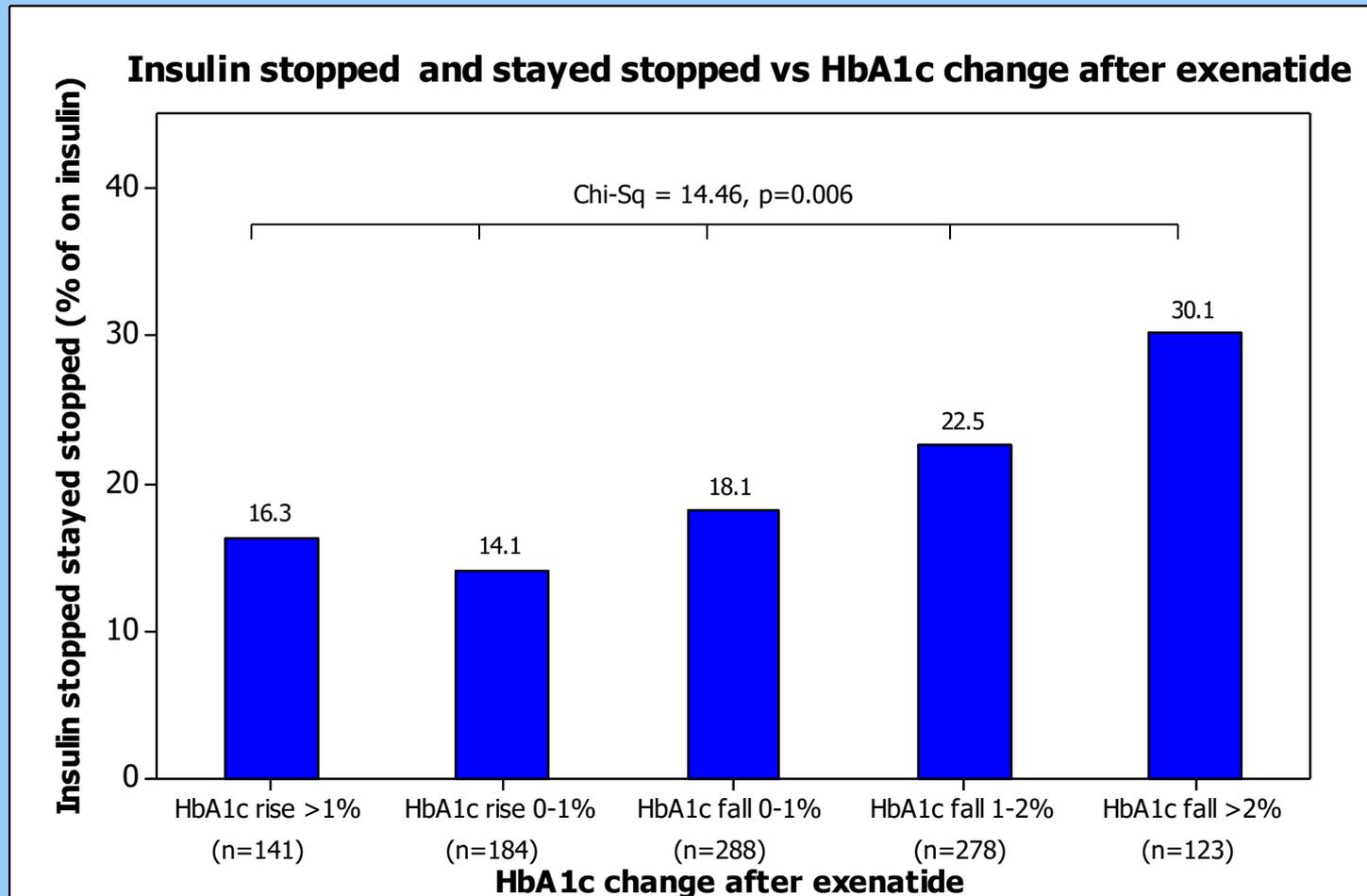
Percentage males in the 5 HbA1c change groupings in 3053 patients



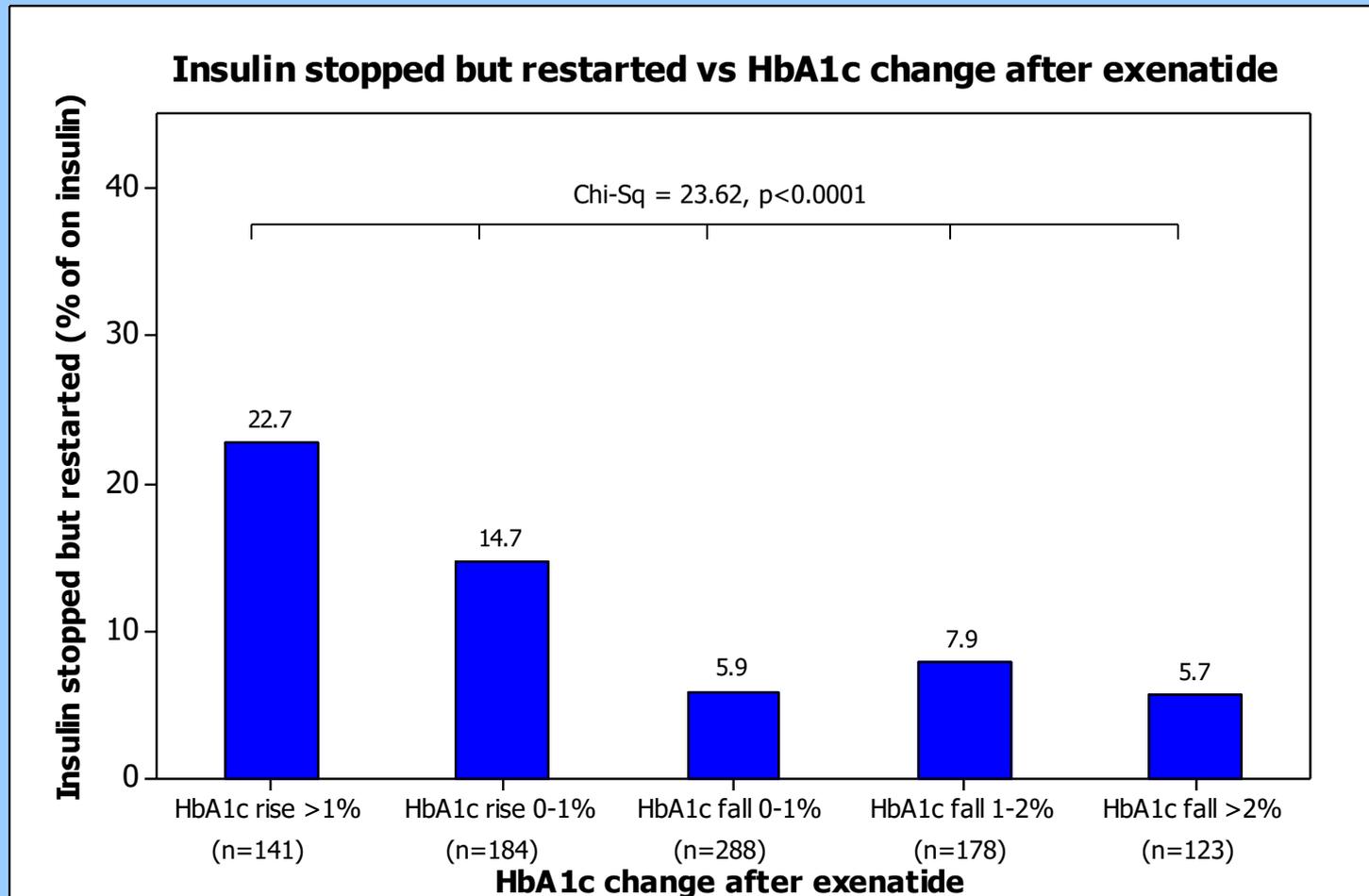
Percentage on insulin pre-exenatide in the 5 HbA1c change groupings in 2953 patients



Percentage of the 914 patients on insulin pre-exenatide who stopped insulin and it stayed stopped in the 5 HbA1c change groupings



Percentage of the 914 patients on insulin pre-exenatide who stopped insulin but it was restarted in the 5 HbA1c change groupings



In summary - HbA1c groupings



- Those who with the greatest falls in HbA1c after exenatide had higher initial HbA1c
- Those who experienced the greatest rise in HbA1c after exenatide had a higher initial weight. They were also more likely to be on insulin before being started on exenatide; of those who had their insulin stopped when exenatide was started those with a rise in HbA1c were more likely to have it restarted.

Anecdote 6:

Insulin replaced by exenatide – extreme deterioration in HbA1c



Male, age 64, on exenatide for 5 months. Insulin stopped when starting exenatide

Before Exenatide After Exenatide

Medication

Metformin 1gm BD
Humulin M3 130 iu/day

Metformin 850mg BD
Exenatide 10 BD

Data

HbA1c = 7.5%
Wt = 113.2 Kg
BMI = 37

HbA1c = 15.1
Wt = 99 Kg
BMI = 32.3

Weight loss

14.2 kg

HbA1c fall

-7.6%

Comment

Our highest HbA1c rise after starting exenatide – in a patient who stopped insulin in order to start exenatide



Those who experienced the greatest rise in HbA1c after exenatide had a higher initial weight. They were also more likely to be on insulin before being started on exenatide; of those who had their insulin stopped when exenatide was started those with a rise in HbA1c were more likely to have it restarted.



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HbA1c fall

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Comment

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Anecdote 5: Exenatide mistaken for bariatric surgery



Female, age 47, on exenatide for 14 months. Both pioglitazone and gliclazide were stopped

Before Exenatide After Exenatide

Data

HbA1c = 8%

HbA1c = 8.7%

Wt = 152 Kg

Wt = 110.3 Kg

BMI = 52

BMI = 37.7

Weight loss

41.7kg

HbA1c fall

- 0.7%

Comment

Patient was on waiting list for bariatric surgery lost 42 kg in weight on exenatide! At bariatric surgery clinic she was asked by the nurses "when did you have your bariatric surgery!"

Those who experienced the greatest rise in HbA1c after exenatide had a higher initial weight. They were also more likely to be on insulin before being started on exenatide; of those who had their insulin stopped when exenatide was started those with a rise in HbA1c were more likely to have it restarted.

Female, age 47, on exenatide for 14 months. Both pioglitazone and gliclazide were stopped

	Before Exenatide	After Exenatide
Data	HbA1c = 8% Wt = 152 Kg BMI = 52	HbA1c = 8.7% Wt = 110.3 Kg BMI = 37.7
Weight loss		41.7kg
HbA1c fall		- 0.7%
Comment	Patient was on waiting list for bariatric surgery lost 42 kg in weight on exenatide! At bariatric surgery clinic she was asked by the nurses "when did you have your bariatric surgery!"	

In summary - HbA1c groupings continued



In particular:

- These data suggest that stopping insulin when starting exenatide may lead to worsening of glycaemic control, especially with
 - a higher initial weight
 - lower HbA1c
- i.e. the heavier, more insulin resistant patient, whose diabetes is currently controlled to some extent by insulin and whose insulin is then stopped

Other side effects

Total number	3913	Percentage of total
Post exenatide hypoglycaemia	177	4.52%
Pre exenatide hypoglycaemia	104	2.66%
Pancreatitis	7	0.18%
Fatigue	23	0.59%
Headache	48	1.23%

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Headache	48	1.23%

7 pancreatitis cases



- The six centres contacted
- 6/7 were mistakes in data entry!
- 1 actual case though causal relation to exenatide uncertain:

1 pancreatitis case



- Amongst the 4000 patients in the preliminary analysis, there was only one case of acute pancreatitis - in a 50 year old male:
 - two admissions with acute abdominal pain prior to exenatide
 - admitted again 4 months after starting exenatide with two weeks of intermittent abdominal pain
 - admitted significant increase in alcohol prior to admission
 - normal amylase on admission
 - acute pancreatitis suggested on CT scan
 - extreme hypertriglyceridaemia (triglycerides 87.8 mmol/L)

Anecdote 4: Eruptive xanthoma



Male, age 46

Before Exenatide After Exenatide

Data

HbA1c = 12.8

Wt = 156.3

BMI = 51

Cholesterol 17.7

Triglycerides 20.7before



Cholesterol 19.1

Triglycerides 49.5 high

Comment

3 – 4 days after starting exenatide developed eruptive xanthoma. Link to exenatide uncertain as had had eruptive xanthoma before in association with starting insulin.

ABCD Nationwide Exenatide Audit

- 7559 patients promised
- 5313 patients had data actually entered
- 3913 data usable
 - NB information from David Dove of at least one case of fatal pancreatitis among the patients whose data we have but not yet analysed

ABCD Exenatide Audit

- It is not too late to contribute additional cases or update information – we need the last 6 months of HbA1c and weight to draw the graph against time

Descriptive Statistics: Baseline_HbA, 3MonthHbA1c, 6MonthHbA1c, ...

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median
Baseline_HbA1c	3326	0	9.5498	0.0297	1.7112	5.2000	8.4000	9.3000
3MonthHbA1c	2152	1174	8.8305	0.0391	1.8135	4.9000	7.5000	8.5000
6MonthHbA1c	1200	2122	8.9128	0.0556	1.9274	4.7000	7.5000	8.6000
9MonthHbA1c	504	2820	8.9990	0.0857	1.9245	5.2000	7.5000	8.7000
12MonthHbA1c	279	3041	8.934	0.108	1.806	5.600	7.500	8.700
15MonthHbA1c	98	3221	8.811	0.202	2.004	6.200	7.200	8.300
18MonthHbA1c	25	3271	8.736	0.484	2.421	5.800	7.000	7.700
21MonthHbA1c	4	1101	8.30	1.71	3.42	6.10	6.25	6.85
24MonthHbA1c	2	516	7.500	0.900	1.273	6.600	*	7.500

Variable	Q3	Maximum
Baseline_HbA1c	10.6000	17.9000
3MonthHbA1c	9.8000	17.5000
6MonthHbA1c	10.1000	18.3000
9MonthHbA1c	10.3000	16.1000
12MonthHbA1c	10.200	13.900
15MonthHbA1c	10.200	14.300
18MonthHbA1c	10.400	15.000
21MonthHbA1c	11.80	13.40
24MonthHbA1c	*	8.400

ABCD Nationwide Exenatide Audit

Main conclusion

- We need a research fellow for any future audits!