BIOSIMILARS

a view from the clinic, from both sides of the border.

25/10/2018

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An Academic Partner of Trinity College Dublin

CONFLICTS OF INTEREST

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Infliximab: The First Approved Monoclonal Antibody Biosimilar

Remsima, Inflectra, Flixabi

One single infliximab biosimilar produced by Celltrion Inc., South Korea

EU approval on Sept 12, 2013

Approval by Health Canada on Jan 15, 2014

Approved by US FDA January 2018

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Ireland

seen from europe

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Leeds Centre for Digestive Disease
IBD Unit

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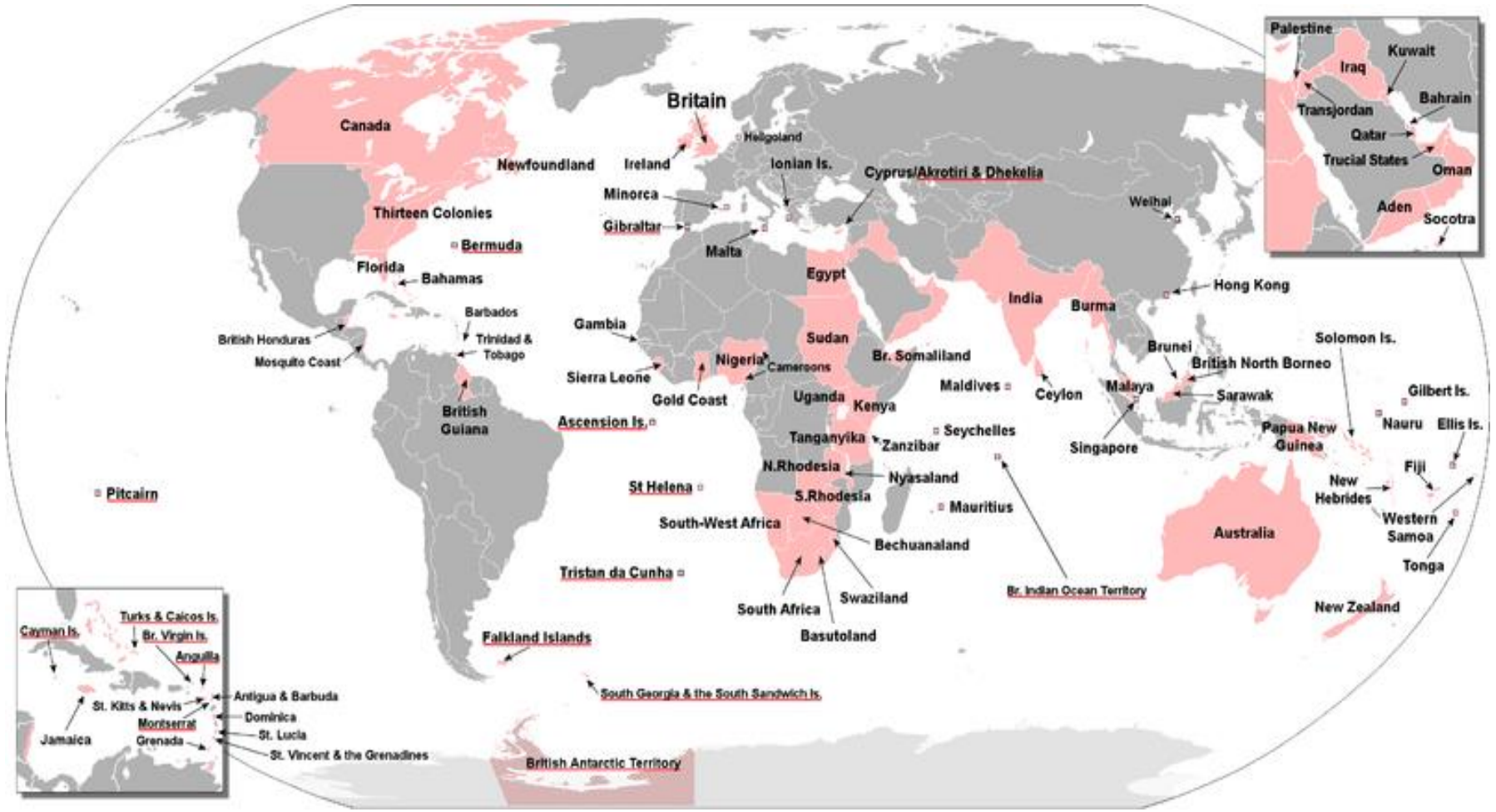

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Leeds Centre for Digestive Disease
IBD Unit

- 2 General IBD Clinics/wk
  - Combined Med/Surg x 2/month
  - Combined GI/Rheum x 1/month
  - Combined GI/Obstetrics x 1/month
  - Combined adult/paed transition x 1/month
  - Telephone Clinics x 3/week
  - Monthly Virtual Biologic clinics
- 6 IBD CNS
- IBD MDT weekly : 4 GIs, 3 Colorectal surgeons, 5 GI Radiologists, MDT Co-Ordinator, 1 Pharmacist, 1 Dietician, Clinical Psychology Support
- IBD Governance meeting quarterly
- IBD Research meeting monthly
- IBD Patient panel monthly
- Yorkshire IBD School for SpRs
- National Study Day
- Dedicated chromo and fluoro stricture dilatation lists

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Leeds

Popn. 766,399

All Hospitals 8

Acute Hospitals 1 across 2 sites (incl maternity, paediatric, psych) 3 minor hospitals within trust

Private Hospitals 2

- **Dublin**
  - Popn. 1,273,069
  - All Hospitals 50
  - Acute Hospitals 8
  - Maternity Hospitals 3
  - Psychiatric Hospitals 5
  - Private Hospitals 8
  - Orthopaedic Hospitals 1
  - Rehab hospitals 1
  - Paediatric Hospitals 3
  - Military Hospitals 1
  - Dental Hospitals 1
  - Eye and Ear Hospitals 1

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Leeds

- 11.5 WTE Gastroenterologists
- 20 Trainees
- 6 IBD Nurses
- 1 site
- No GIM commitment

- Dublin
  - 26.5 WTE Gastroenterologists
  - 30+ Trainees
  - 8 IBD Nurses
  - 6 sites
  - Huge GIM commitment

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STARTING POINT

2500 patients

210 on IFX maintenance

63 started in 12 months after switch

2000 patients

94 on IFX maintenance

23 started in 5 months after switch

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THE TENDERING PROCESS

In both places, MDT, Inter-speciality process

Pharmacy, tendering, Clinicians (Derm, rheum, GI)

Medical and Nursing

4-6 meetings

Competitive tender process

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PATIENT ENGAGEMENT

Drew on long-standing partnerships

Trust

Written information

Independent Town Hall style meetings

Opt-out/Opt-in consent?

SHAREGAIN/GAINSHARE IS ABSOLUTELY CRITICAL!

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OBJECTIVES

Is it effective and safe to switch patients on stable originator product to CT-P13?

Is CT-P13 as effective and safe to use as originator in patients naive to infliximab?

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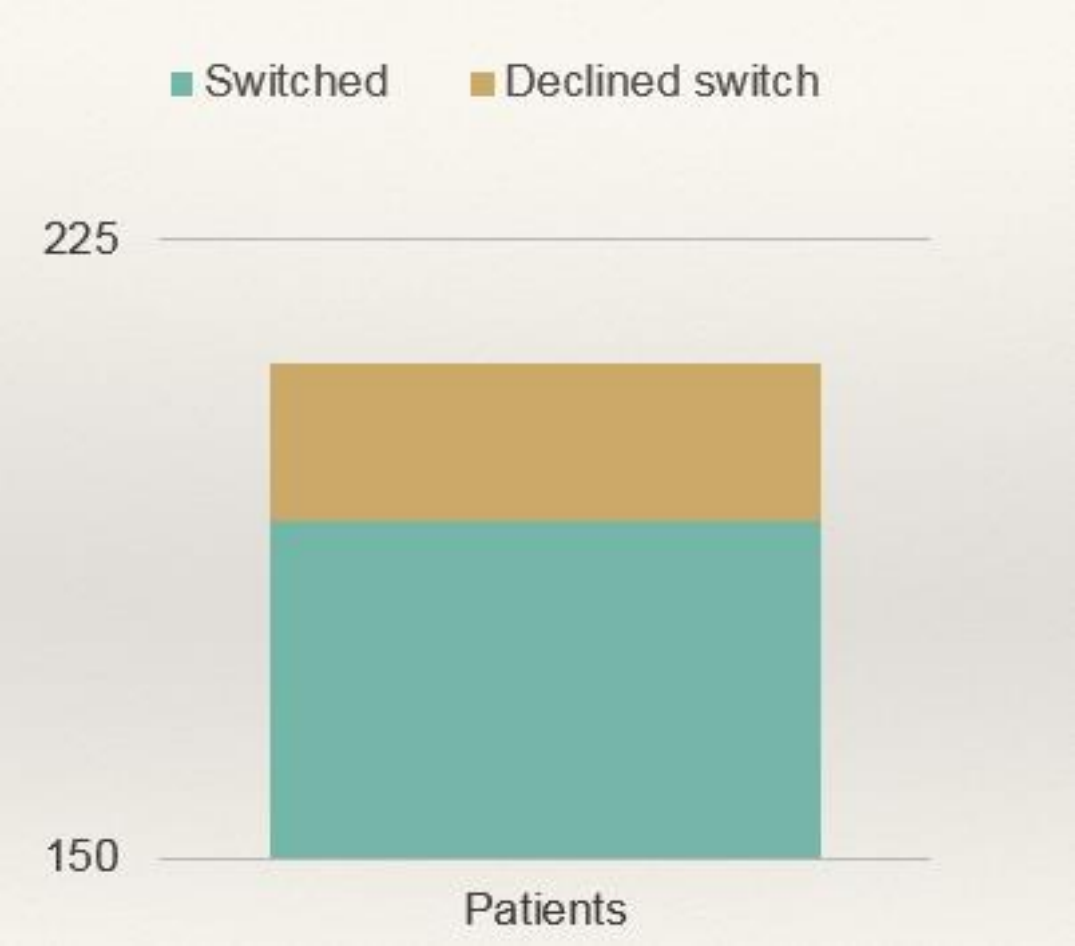
OUTCOMES



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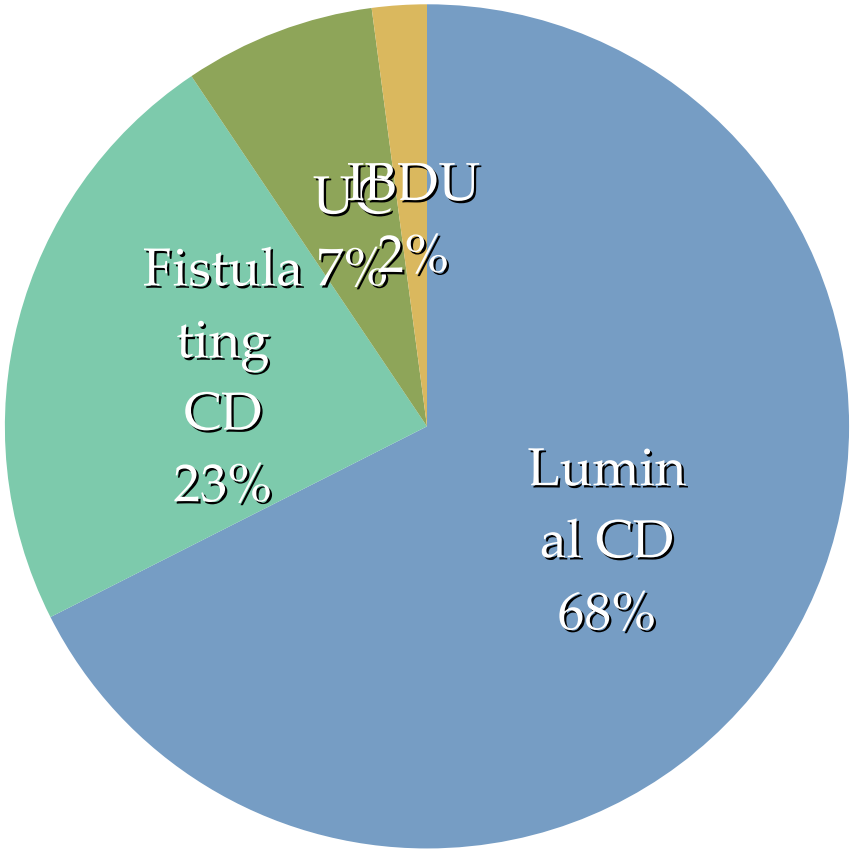
SWITCHERS

45.5% Female

Mean Age 42.7 years

Mean Duration 55 months



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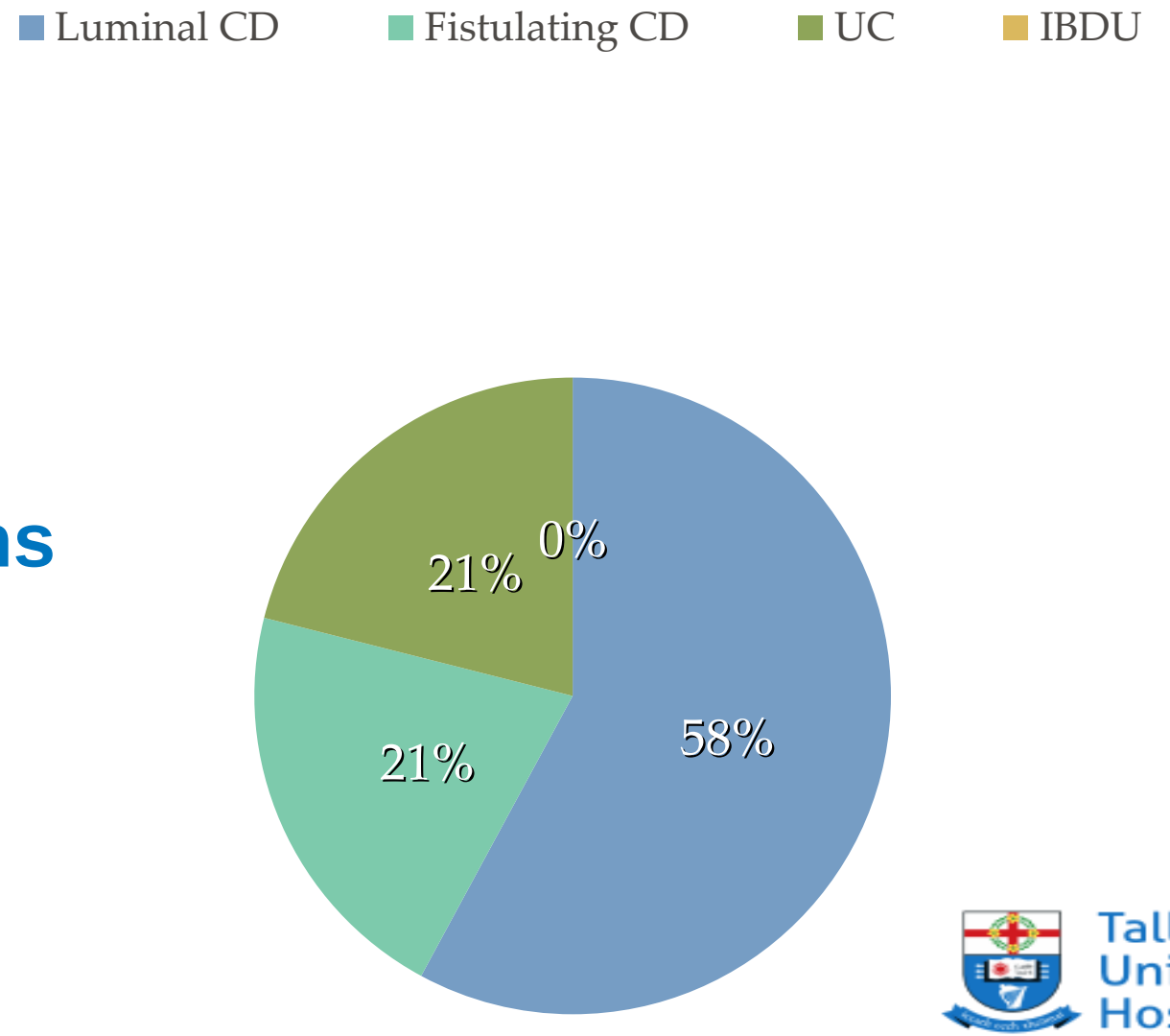
NON-SWITCHERS



63.2% female

Mean age 38.4 yrs

Mean duration 53 months

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OUTCOMES AT 12 MONTHS

Remission : asymptomatic, CRP<5mg/L, steroid-free

Response : asymptomatic, improving CRP/HBI/Mayo

Primary Non-Responders : No response after 3 months

Secondary Non-Responders : Relapse according to PGA following initial response, including dose escalation, steroids, alternative biologic or surgery

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OUTCOMES AT 12 MONTHS

	Switchers	Non Switchers	P
Remission	58.1% (111)	47.4% (9)	0.37
Response Maintained	76.4% (146)	63.2% (12)	0.20
Secondary Non-Response	24.6% (47)	42.1% (8)	0.10
Adverse Events	4.7% (9)	0	1.0
CRP (3 months)	7.0 (+/-7.3 sd)	6.5 (+/-5.4 sd)	0.53

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ADVERSE EVENTS

4 dermatitis

3 infusion reactions

1 cavitating lung lesion

1 headache/LOC, recurred when switched back

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NEW STARTERS

	Year Before Switch Originator	Year After Switch CT-P13
Patients	53	69
Gender	54.7% female	49.3% female
Mean Age	38.2 years	36.5 years
Mean duration	5.1 months	6 months
Luminal CD	49.1% (26)	31.9% (22)
Fistulating CD	24.5% (13)	13% (9)
UC	24.5% (13)	50.7% (35)
IBDU	1.9% (1)	4.3% (3)

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EFFECT OF UC PROPORTION

50.7% in CT-P13 group vs 24.5% in Originator (P=0.003)

Higher CRP (20.2 vs 10.6, P=0.008)

Lower partial Mayo (5 vs 11, P=0.007)

HBI 7 vs 4

66 months vs 79 months (P=0.40)

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NEW STARTERS OUTCOMES

	Originator	CT-P13	P-value
Remission	26.4% (13)	42% (29)	0.07
Response	22.6% (12)	21.7% (15)	0.91
Primary non-response	15.1% (8)	5.8% (4)	0.09
Secondary non-response	22.6% (12)	21.7% (15)	0.91
Adverse events	11% (6)	8.7% (6)	0.95

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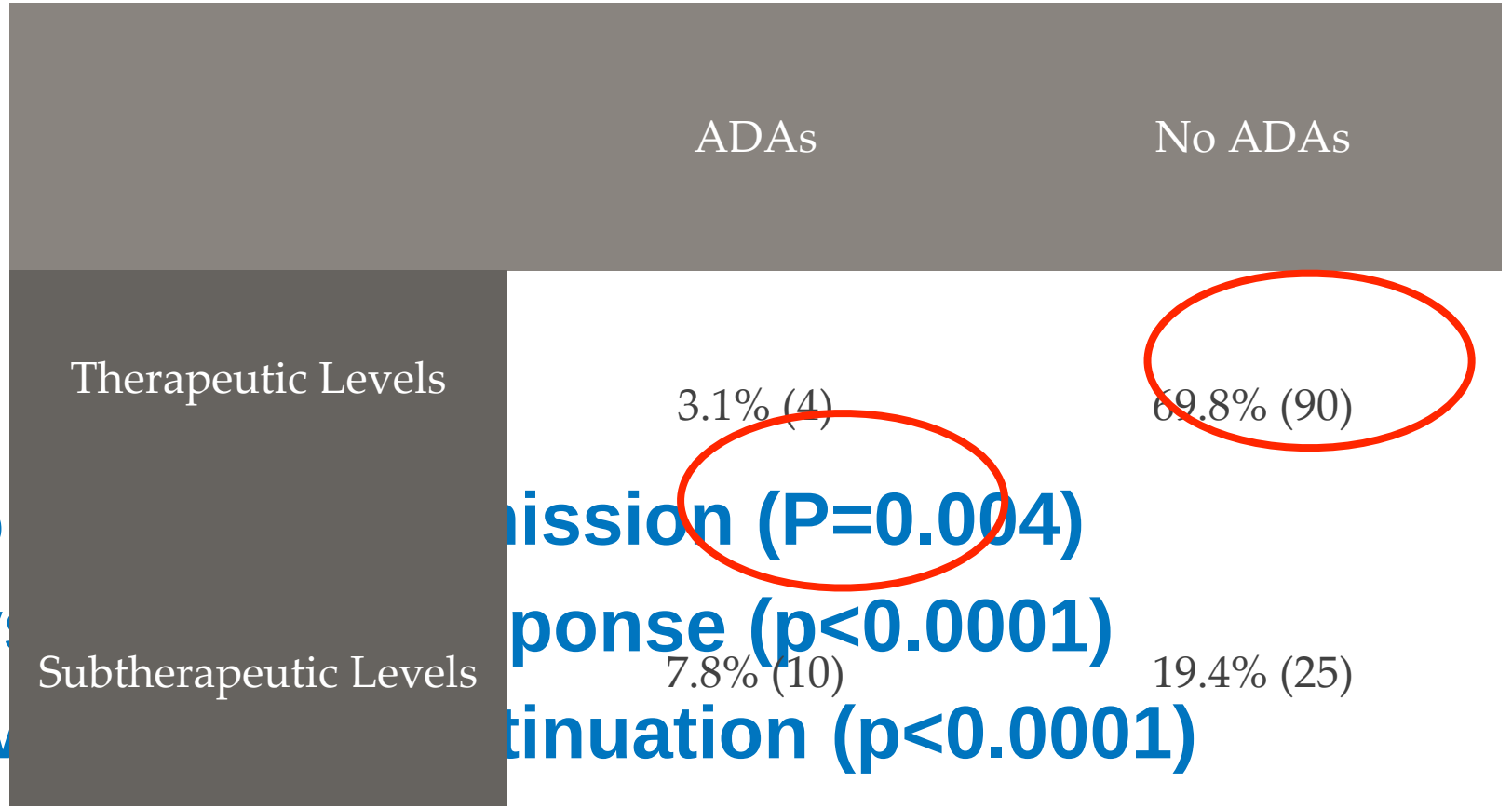
DRUG AND ANTIBODY LEVELS

Measured in 129 patients before switch



66.7% … mission (P=0.004)

20% vs … ponse (p<0.0001)

6.7% v… tinuation (p<0.0001)

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PATIENT FEEDBACK

“I know I have said this before however, it's astounding when you put into figures how much money switching over to something like biosimilars saves the Trust. £800,000 is a phenomenal saving and one that as you say rightly then gets ploughed back into supporting IBD patients, increasing service support, looking at new and innovative ways in which to develop services and support for the future”

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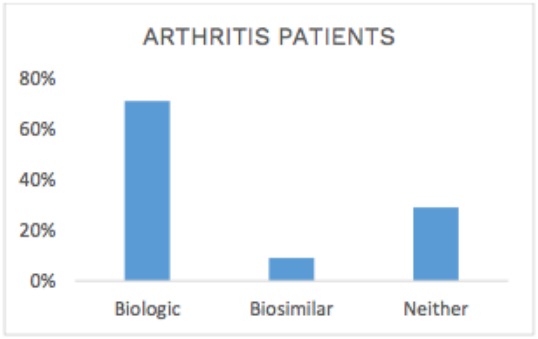
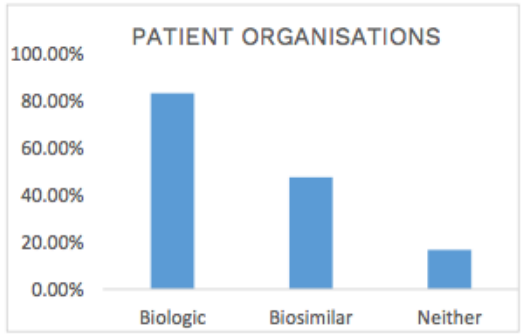
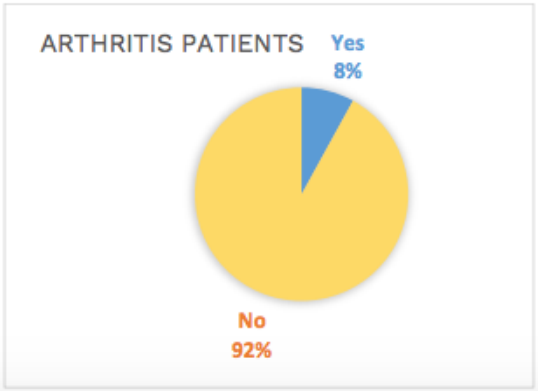
Awareness among Patients and Patient Organistions is Poor

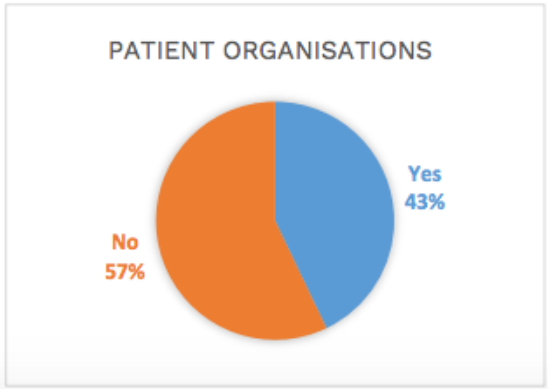
1. **Please indicate if you are familiar with the following terms:**





2. **Do you know the difference between a biologic and a biosimilar?**





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IN TALLAGHT

New starters began in May 2018

All switchovers done by September 2018

3 loss of response, 1 reaction

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Win, Win, Win?

Patients: improved quality of care, increased resources

Hospital: Drug acquisition cost savings

Clinicians: service development / investment

Suite of services we offer the community

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CONCLUSIONS

Non-inferior and safe to switch in established patients and commence in naive patients

No difference in remission, response, secondary loss of response, adverse events, biomarkers after switching.

Hard to draw too many conclusions on new starters as a different looking cohort.

Drug and antibody testing useful pre-switch.

We saved £1Mstg per year.

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TAKEAWAYS

Switches can work

Building trust will be hard from a standing start

Communication is key

How do we handle consent issue?

What do we do with the savings?

How will Gainshare work with non-infusion therapies

It’s necessary to make it profitable for people to make biosimilars.

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QUESTIONS?

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