



# Next Generation Bariatric Metabolic Surgery - An integrated future

Where is Pharma Heading?

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**[X ] I have the following potential conflict(s) of interest to report:**

- Receipt of honoraria or consultation fees: Honoraria from Novo Nordisk, iNova
- Other support : Royalties from the sale of Contrave <sup>TM</sup>

- Currently available drugs
- Drugs in late development
- The developing interest in preserving muscle/ building
- Combination surgery and drug therapy

# Current Obesity Pharmacotherapies

Seminar



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## Obesity in adults

*Ildiko Lingvay, Ricardo V Cohen, Carel W le Roux, Priya Sumithran*



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  - HbA1c, MACE, apnoea, .....

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  - HbA1c, MACE, apnoea, .....
- Some issues with tolerability / anaesthesia\*
  - Nausea, vomiting, gastroparesis

# Current Obesity Pharmacotherapies

- Newer drugs
  - Setmelanotide [MC4 R]
    - Used for rare genetic forms of obesity
    - Substantial weight loss

# Obesity Pharmacotherapies in Development

- Single/Multi-receptor agonists

• Orforglipron	[oral GLP-1]	15%+
• Retruatide	[GLP-1 R + GIP R + Glucagon R]	24%+
• Survotide	[GLP- 1 R + Glucagon R]	19%+
• CagriSema	[GLP-1 R + Amylin R]	16%+ (28%?)

# Obesity Pharmacotherapies in Development

- Over 120 new agents in development
- Much more than Eli Lilly/ Novo Nordisk
  
- Other targets
  - Amylin
  - Activin/Myostatin

# Role of Muscle

- Quality of life
- Energy Expenditure
  - Muscle, even resting, consumes significant energy,
  - Decreased energy expenditure can limit voluntary weight loss,
  - Loss of lean mass is a part of most weight loss,
  - Usually 1/5<sup>th</sup> of total loss is lean mass,
  - Unclear effects of GLP-1 R agonists on muscle mass
    - However, no reduction in EE with weight loss

# Myostatin



No Myostatin





No Myostatin



# Obesity Pharmacotherapies in Development

- Over 120 new agents in development
  - Much more than Eli Lilly/ Novo Nordisk
  - Other targets
    - Amylin
    - Activin/Myostatin
    - Urocortin
    - Apelin
- All proposed to be muscle building or preserving.

# 30 % weight loss is possible with pharmacotherapy

- Pharmacotherapy tried before surgery for many patients
- More efficient pre-surgical weight loss if needed
- Better options if there is insufficient weight loss after surgery
- In combination, potential to bring weight down to 20-25 BMI?
- No understanding of why some patients respond to any particular drug
- No idea what will work best in combination
- Current drug costs \$5,500/year VS \$25,000

Thank you.