

1. Ephedrine Caffeine
 - 1) Caffeine adenosine receptor phosphodiesterase 가
 1- ephedrine
 2- fat burner 가
 가 uncoupling
 가 protein 가
 가 가 가
- 2) 1. Sibutramine (Meridia®, Reductil®)
 - 1) Sibutramine 2
 (5-hydroxytryptamine, 5-HT) 가
 5-HT 1B/ 1D 5-HT 2C 4, 5) Sibutramine serotonin
 D- (5-hydroxytryptamine; 5-HT) and noradrenaline reuptake inhibitor (SNRI) . Sibutramine
 가 (Prozac) secondary amine primary amine ,
 (Seroxat) NA reuptake
 (selective serotonin reuptake inhibitors, selective NA reuptake inhibitor desipramine
 SSRI) , serotonin reuptake
 selective serotonin reuptake inhibitor fluoxetine
 3) Sibutramine
 Sibutramine (Reductil, Meridia) monoamine neurotransmitter release monoamine
 norepinephrine serotonin oxidase (MAO)
 (SNRI: serotonin norepinephrine reuptake inhibitor) 가
2. 2) Sibutramine
 . D- amphetamine
 가
 가 locomotor activity가
 (1) Disaccharidase ; 가 NA reuptake inhibitor
 (2) ; Orlistat nioxetine 5-HT reuptake inhibitor fluoxetine
- 3.

3) Sibutramine thermogenesis 가

18%, 17%, 22%

sibutramine 30% 가 6 efferent sympathetic activity β -adrenoreceptor (AR)

5) Sibutramine noradrenergic . Sibutramine 10 15 mg 2 mmHg 1

β -adrenoreceptor BRL 35135 sibutramine 3 6 가 glucose utilization , LDL-

, HDL- BRL 35135 13 , sibutramine 18 가 , type 2

가 BRL 35135 brown adipose tissue (BAT) β AR

6) sibutramine BAT β AR 14 16 10 15 mg

sibutramine BAT β AR 1AR

sibutramine 1 mine 8 가

sibutramine 가 , 1

sibutramine ⁸⁾ sibutramine 1

4) BMI 27 40 kg/m² sibutramine 10 mg 가 15 mg 24

1%

3 5 kg 1 ⁶⁾ 1

Table 2. Sibutramine

1.8 kg , 10 mg, 15 mg 4.8 kg 6.1 kg

% of patients		
Adverse events	Sibutramine (1976)	Placebo (605)
Dry mouth	18	5
Dysmenorrhea	4	1
Anorexia	14	4
Sweating	3	<1
Constipation	11	6
Tachycardia	3	<1
Insomnia	11	5
Vasodilation	3	<1
Appetite increase	9	3
Ear disorder	2	<1
Dizziness	7	4
Paresthesia	2	<1
Nausea	6	3
Joint disorder	1	<1
Abdominal pain	5	3
Tenosynovitis	1	<1

1 5% 가 29% , 10 mg 56%, 15 mg 65%

가 8% , 10 mg 30%, 15 mg 39%

Sibutramine Trial of Obesity Reduction and Maintenance (STORM Trial)

6 18

가 ⁷⁾

sibutramine 10 mg 6 11.2 kg, 5.5 cm, -

0.03 0.04 CT

7) Sibutramine 가 84%, 57.4%, 77.2%, 10%, 20, 71%, 18%, 25%, 35, 50%, 1, 14%, 11%, 11%, 9%, 52%가, 7%, 6%, 0.3, 0.4%, 가, 26%, Serotonergic agents fenfluramine dexfenfluramine (2). 가, 1%, 가, 3%, 5%, 2. Orlistat (tetrahydrolipstatin, Xenical) 가, 1, Orlistat Streptomyces toxytricini lipstatin . Orlistat 가, 4.5 cm, 7.3 cm, 3), -lactone ring lipase 1 orlistat LDL-, Pancreatic lipase triglyceride free LDL/HDL 가, fatty acid monoglyceride . Apo B, 7). Orlistat triglyceride Lp (a) , GI lipase serine , HbA1c lipase 30% 가, 200 Kcal 가 . Orlistat type 2 9), lipase , Lipoprotein 4), lipase hepatic lipase GI lipase Orlistat 120 mg 3 , 2 . 120 mg , 120 mg 2) Orlistat 가 . Orlistat lipase가 BMI 28 43 kg/m² 4,000 , lipase orlistat 30% 가 . 1 120 mg 3 , 2 가 6.1% (6.1 kg)가 5) Orlistat , 2 10.2% (10.3 kg)가 Orlistat 97%가 8.1%가 1 8). 35.3%, 29.1%, 2 18.7%, 18.6% , 1 5% 가 1

Table 3. Orlistat

Adverse events	Year 1 (1913)		Year 2 (613)	
	Incidence (%)	Withdrawal (%)	Incidence (%)	Withdrawal (%)
Oily spotting	26.6	1.7	4.4	0.2
Flatus with discharge	23.9	0.6	2.1	0.2
Fecal urgency	22.1	0.3	2.8	0.0
Fatty/oily stool	20.0	0.1	5.5	0.3
Oily evacuation	11.9	0.0	2.3	0.0
Increased defecation	10.8	0.3	2.6	0.0
Fecal incontinence	7.7	1.1	1.8	0.2

Table 4.

-
Cholecystokinin (CCK)
CCK inhibitor anagonist (butabindi)
Gastrin-releasing peptide, neuromedin B, bombesin
Glucagon-like peptide- 1 (GLP- 1)
(pyruvate, lactate, 3- hydroxy- butylate, hydroxycitrate)
-
Melanocortin (MSH) -4 (MC-4)
: MCH, galanin, CRH, orexin
Serotonin (5-HT 2c) agonist
Dopamine
Fatty acid transporer (FATP4)
3- adrenergic receptor agonist
Uncoupling protein (UCP- 1,2,3)
Protein tyrosine phosphatase- 1B (PTP- 1B)
Acyl CoA:diacylglycerol transferase (DGAT)
Testosterone

4.9%, 8.8%, 2.5%, 3.6% ,
 가 1 2.6%,
 1.0%, 2 2.1%, 1.0% ¹⁰⁾. Orlistat -
 가 orlistat 가
 , 가 , , , ,
 1 20 26.6% ,
 가 2 2 5% (3).

pravastatin bioavailability 가

가

3. Ephedrine/Caffeine

가

가

10% 가 ¹¹⁾.

가

Astrup ¹⁴⁾

(60 mg/1) 6

가 10 kg , (600 mg/1)

10kg

(60 mg 600 mg/1)

가 가 15 kg

가

가

25 40%

75%

가

60

가

가

가

가

가

가

(4).

가

가

가

가

가

가

REFERENCES

- 1) 2000
- 2) Jequier E, Tappy L. Regulation of body weight in humans. *Physiol Rev* 79:451-480 1999
- 3) Bray GA, Greenway FL. A review of current and potential drugs for treatment of obesity. *Endocr Rev* 20:805-875, 1999
- 4) Rolls BJ, Shide CJ, Thorwart ML, Ulbrecht JS. Sibutramine reduces food intake in nondieting women with obesity. *Obes Res* 6:1-11, 1998
- 5) Hansen DL et al. Thermogenic effects of sibutramine in humans. *Am J Clin Nutr* 68: 1180-1186, 1998
- 6) Seagle HM, Gessesen DH, Hill JO. Effects of sibutramine on resting metabolic rate and weight loss in overweight women. *Obes Res* 6:115-121, 1998.
- 7) Sjostrom L, et al. Randomized placebo-controlled trial of orlistat for weight loss and prevention of weight regain in obese patients. *European Multicentre Orlistat Study Group. Lancet* 352: 167-172, 1998
- 8) Davidson MH, Hauptman J, DiGirolamo M. Weight control and risk factor reduction in obese subjects treated for 2 years with orlistat. A randomized controlled trial. *J Am Med Assoc* 281:235-242, 1999.
- 9) Hollander P, et al. Role of orlistat in the treatment of obese patients with type 2 diabetes. *Diabetes Care* 21:1288-1294, 1998
- 10) Hill JO, et al. Orlistat, a lipase inhibitor, for weight maintenance after conventional dieting A 1 year study. *Am J Clin Nutr* 9:1108-1116, 1999
- 11) Astrup A, Lundsgaard C. Enhanced thermogenic responsiveness during chronic ephedrine treatment in man. *Am J Clin Nutr* 42:83-94, 1985

2001 12 :
2002 1 :
2002 2 :

2002 4 :
2002 5 : COPD
2002 6 : B
