Clinical and Metabolic profile of Male-to-Female transgender in Zamboanga Peninsula

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Introduction

Transexualism
- Strong Desire to change one's anatomical gender[1].

Prevalence
- Western countries
  - 1:7,400 male and 1:30,400 female
- Philippines
  - Gay statistic: 804,280 ($_{1993\text{-}2006}$)[3]

1. Meyer et al., 2001, Standards of care for Gender Identity Disorders of the Harry Benjjamin International Gender Dysphoria Association.
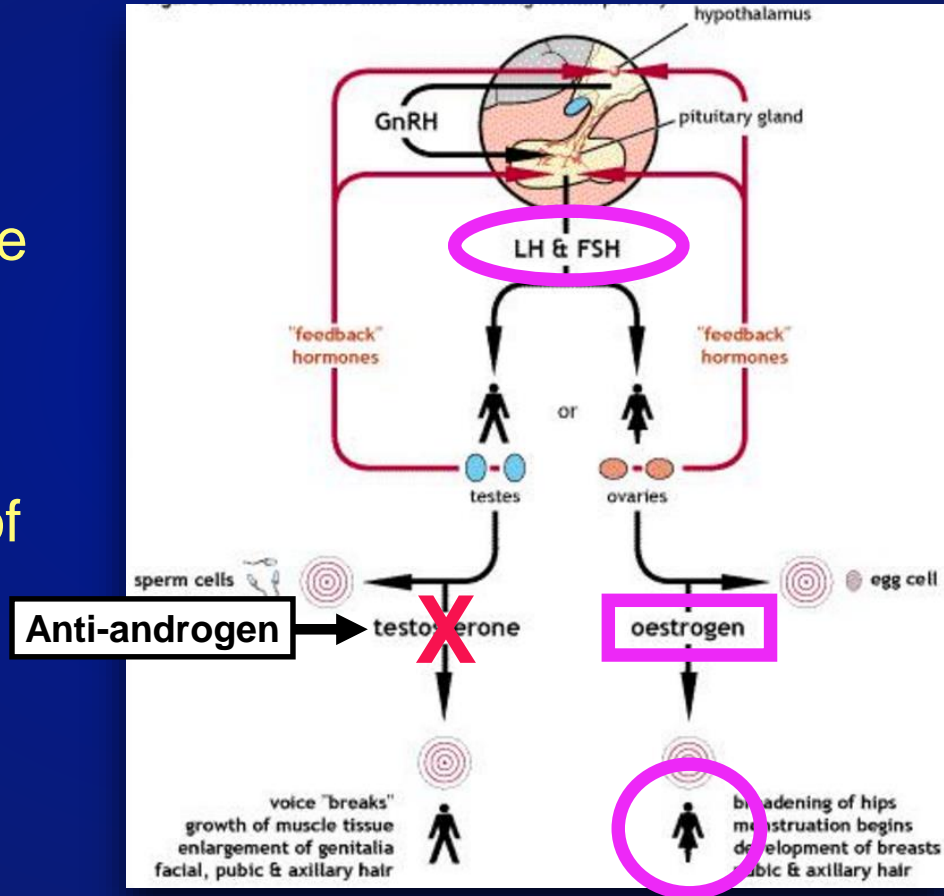2. Gooren L. Hormone treatment of the adult transsexual patient. Horm Res 2005
3. Lagablab 2006: Gay statistics in the philippines

Introduction

Sex reassignment therapy

- Acquisition to the fullest extend possible of the sex characteristics of the other sex[1].

Benjamin, H. (1967) Transvestism and transsexualism in the male and female. Journal of Sex Research

Introduction

World Professional Association for Transgender Health (WPATH)

- Antiandrogens
    - Spironolactone 100-400mg per day
    - Others Cyproterone & Finasteride
- Estrogen (**17B estradiol**)
    - Transdermal: 100-400mcg/2x a week
    - Oral: 2-6 mg per day

1. Hembree et al. Endocrine treatment of transsexual persons: an Endocrine Society clinical practice guideline. 2009

Introduction

Side effect of cross-sex hormone therapy

- Occurrence of serious side effect
  - <40 years old: 2.1%
  - >40 years old: 12%
- Liver enzyme abnormalities and elevation of cholesterol and triglycerides.
- Pulmonary embolism,cerebral thrombosis, myocardial infarction, prostate metaplasia and breast cancer
- Mortality increase to 6 fold

Asscheman et al 1992; Hormone treatment in transexual

Introduction

Cross-sex Hormone therapy in the Philippines

- Not allowed legally to change gender of Sex
- Most Transgender self-prescibe cross-sex hormone
- Conflicting result with cross-sex hormone therapy regarding side effects
- Impact of unregulated, self-prescribe cross-sex homrone therapy among Filipino.

Asscheman et al 1992; Hormone treatment in transexual

Objectives

Primary Objectives

- To determine the Clinical and Metabolic profile of Male-to-Female(MtF) transgender in Zamboanga peninsula

- To describe any cardiovascular complication among MtF transgender currently or previosly on cross-sex hormone therapy.

Objectives

Specific Objectives

- to determine the demographic and clinical characteristics of MtF transgenders

- to describe the metabolic profile of MtF transgender currently or previously taking cross-sex hormone drug

- to describe the practices of self-prescribe, unsupervised cross-sex hormone drug use among MtF transgender

Methodology

Study Design

- Cross-sectional study

Population

- Male

- 18 years old and above

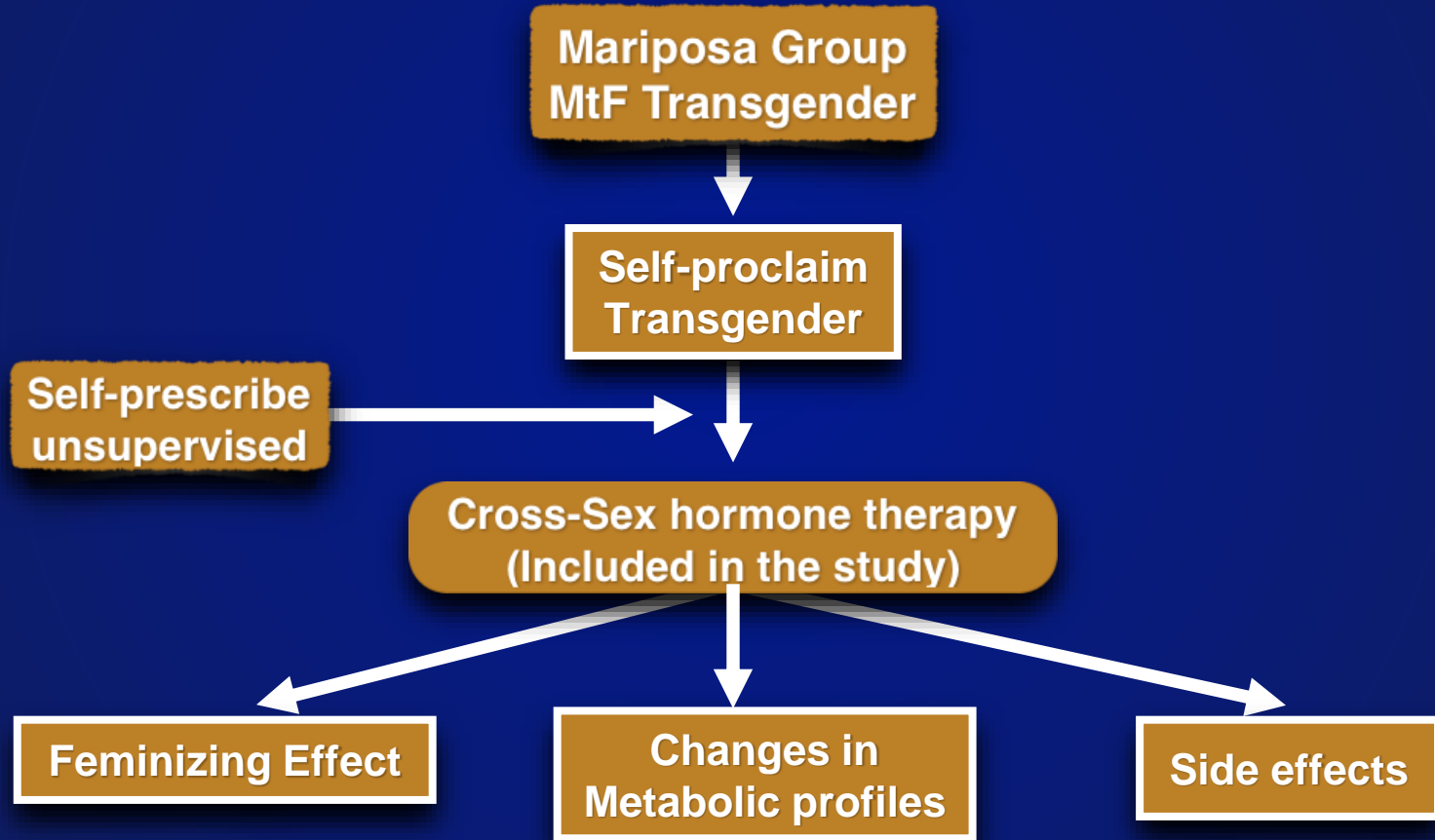- Currently or previously on cross-sex hormone therapy with in 2 years[1]

Lopez et al, 2013; Effect of cross-sex hormone treatment on lipid profile in transexual individuals

Methodology

Sample Size

- ‣ Non-probability Sampling
- ‣ Recruited 30 MtF transgender (Mariposa)

Lopez et al, 2013; Effect of cross-sex hormone treatment on lipid profile in transexual individuals

Conceptual Design

Results

Demographic Profile

Variables	Group 1, n= 20*			Group 2, n=10 *			Total, n=30		P=value
	Freq	%	Mean, SD	Freq	%	Mean, SD	%	Mean, SD	
Age group									
• 15-25	13	65%	23.9±5.92	0	0	32±1.98	43.33%	26.9±5.92	0.001
• 26-35	6	30%	Min: 18	8	80%	Min: 31	**46.67%**	Min: 18	
• 36-45	1	5%	Max: 38	2	20%	Max: 37	10.00%	Max: 38	
Educational attainment	0	0		0	0		0		
• Elementary Degree	12	60%		4	40%		60%		
• High school Degree	8	40%		6	60%		40%		
• College Degree									
Employment status									
• Student	1	5%		0	0		3.3%		
• Unemployed	2	10%		1	10%		10%		
• Self employed	1	5%		1	10%		6.6%		
• Employed	16	80%		8	80%		80%		

Group 1: Currently taking cross-sex hormone drug.
Group 2: Previously taking cross-sex hormone drug for the past year

Results

Clinical Profile

Variables	Group 1*			Group 2*			Total		P-value
	Freq.	%	Mean, SD	Freq.	%	Mean, SD	Freq.%	Mean, SD	
Body Mass Index (BMI) • Underweight (<18.5) • Normal (18.5-22.9) • Overweight (23-27.4) • Obese (≥27.5)	3 7 9 1	15% 35% 45% 5%	21.75±3.71 Min: 15 Max: 31	2 5 2 1	20% 50% 20% 10%	21.8±3.70 Min: 18 Max: 28	5,16.67% 12, 40% 11, 36.67% 2, 6.67%	21.76±3.64 Min: 15 Max: 31	0.972
Systolic blood pressure (SBP) • Normal (<120) • Pre-hypertension (120-139) • Hypertension (≥140)	14 6 0	70 30 0	112±6.15 Min: 100 Max: 120	4 6 0	40% 60%	116±5.16 Min: 110 Max: 120	40% 60%	113±6.06 Min: 100 Max: 120	0.089
Diastolic blood pressure •Normal (<80) •Pre-hypertension (80-89) •Hypertension (≥90)	10 7 3	50% 35% 3%	76.5±7.45 Min: 70 Max: 90	2 7 1	20% 70% 10%	79±5.6 Min: 70 Max: 90	20% 70% 10%	77.33±6.91 Min: 70 Max: 90	0.360

Group 1: Currently taking cross-sex hormone drug.
Group 2: Previously taking cross-sex hormone drug for the past year

Results

Clinical Profile

Variables	Group 1*			Group 2*			Total		P-value
	Freq	%	Mean, SD	Freq	%	Mean, SD	Freq,%	Mean, SD	
Smoking status									0.136
• Yes	3	15%		4	40%		40%		
• No	17	85%		6	60%		60%		
Alcohol intake									
• Yes	18	90%		5	50%		23.33%		
• No	2	10%		5	50%		76.67%		
History of prohibited drug use									0.017
• Yes	5	25%		7	70%		60%		
• No	15	75%		3	30%		40%		
History of Hypertension									
• Yes	3	15%		1	10%		13.33%		
• No	17	85%		9	90%		86.67%		
History of Diabetes mellitus									
• Yes									
• No	0	0		0	100%		100%		
	20	100%		10					

Group 1: Currently taking cross-sex hormone drug.
Group 2: Previously taking cross-sex hormone drug for the past year

Metabolic Profile

Variables	Group 1			Group 2			Total		P value
	Freq	%	Mean, SD	Freq	%	Mean, SD	%	Mean, SD	
FBS (mg/dl)									0.460
• Normal (100)	16	80%	93.5±11.27	8	80%	96.7 ±5.45	83.33%	94.56±9.73	
• Pre-diabetes (100-125)	4	20%	Min: 75	2	20%	Min: 88	16.66%	Min: 75	
• Diabetes Mellitus (≥ 126)	0	0	Max: 130	0	0	Max: 106	0	Max: 130	
2 hours 75 OGTT (mg/dl)									0.690
• Normal (<140)	13	65%	131±27.79	5	50%	136±46.94	60%	133±34.40	
• Pre-diabetes (140-199)	7	35%	Min: 87	5	50%	Min: 60	40%	Min: 60	
• Diabetes Mellitus (≥ 200)	0	0	Max: 190	0		Max: 191	0	Max: 191	
HbA1c %									0.040
• Normal (<5.6%)	6	30%	5.79±0.35	2	20%	5.98±0.33	26.67%	5.78 ±0.36	
• Pre-diabetes (5.7-6.4%)	14	70%	Min: 4.8	8	80%	Min: 5.50	73.33%	Min: 4.8	
• Diabetes Mellitus (≥ 6.5%)	0	0	Max: 6.2	0	0	Max: 6.4	0	Max: 6.4	
LDL (mg/dl)									0.377
• Optimal (<100)	6	30%	119±37.64	2	20%	131±26.53	26.67%	123±34.34	
• Near optimal (100-129)	9	45%	Min: 70.9	3	30%	Min: 98	40%	Min: 70	
• Borderline High (130-159)	3	15%	Max: 214	3	30%	Max: 177	20%	Max: 214	
• High (160-189)	0	0		2	30%		6.67%		
• Very high (≥190)	2	10%		0			6.67%		
HDL (mg/dl)									0.306
• Low (<40)	5	25%	45.29±7.66	0		48.11±5.34	16.67%	46.23±7.01	
• Normal (40-59)	14	70%	Min: 33.9	10	100	Min: 42.7	80%	Min: 33.9	
• High (≥60)	1	5%	Max: 61.10	0	%	Max: 59.40	3.33%	Max: 61.10	
Triglyceride (mg/dl)									0.490
• Normal (0-200)	17	85%	123±60.61	9	90%	138±	86.67%	128±54.81	
• High (≥ 200)	3	15%	Min: 30	1	10%	41.92	13.33%	Min: 30	
			Max: 225					Max: 225	
Total Cholesterol (mg/dl)									0.178
• Desirable (<200)	16	80%	123±60.61	6	60%	138±41.92	73.33%	128±54.81	
• Borderline High (200-239)	2	10%	Min: 123	2	20%	Min: 91	86.67%	Min: 30	
• High (≥ 240)	2	10%	Max: 225	2	20%	Max: 215	13.33%	Max: 225	
VLDL (mg/dl)									0.504
• Normal (0-40)	17	85%	34.5±12.02	9	90%	27.36±8.08	86.67%	25.45±10.81	
• High (≥ 40)	3	15%	Min: 6	1	10%	Min: 18.2	13.33%	Min: 6	
			Max: 44			Max: 43		Max: 44	

Group 1: Currently taking cross-sex hormone drug.
Group 2: Previously taking cross-sex hormone drug for the past year

Results

Metabolic Profile

Variables	Group 1			Group 2			Total		P value
	Freq	%	Mean, SD	Freq	%	Mean, SD	%	Mean, SD	
ALT (U/L)									0.975
• Normal (0-40)	17	85%	30.8±27.52	9	90%	31±15.38	86.67%	30±20.87	
• High (≥40)	3	15%	Min: 11	1	10%	Min: 19	13.33%	Min: 11	
			Max: 133			Max: 72		Max: 133	
HbsAg									0.489
• Reactive	1	5%		0	100		5%		
• Non-reactive	19	95%		10	%		95%		
PT									0.210
• Normal (11-14 sec)	16	80%	11.65±0.67	7	70%	11.3±0.56	76.67%	11.54±0.65	
• Prolong (≥ 15 sec)	0	0	Min: 10.50	0	0	Min: 10.50	0	Min: 10.5	
• Low (≤11 sec)	4	20%	Max: 13.40	3	30%	Max: 12.10	23.33%	Max: 13.4	
APTT									0.803
• Normal (25-35 sec)	9	45%	23.13±4.16	6	60%	25.77±2.62	50%	26.01±3.68	
• Prolong (≥ 36sec)	1	5%	Min: 20.8	0	0	Min: 22.4	3.33%	Min: 20.8	
• Low (≤25)	10	50%	Max: 37.6	4	40%	Max: 32.2	46.67%	Max: 37.6	

Group 1: Currently taking cross-sex hormone drug.
Group 2: Previously taking cross-sex hormone drug for the past year

Results

Cross-sex hormone drug use

	n=30 (%)
Drug use for sex hormone therapy	
• Trust pills (Ethinyl Estradiol 30mcg + Levonorgestrel 125 mcg + Fe 75mg)	15 (50%)
• Diane (Cyproterone 2mg + eithinyl estradiol 35 mcg)	
• Micropil Plus (ethinyl estradiol + norethisterone 0.4mg + Fe 75mg)	4 (13.33%)
• Lo-gentrol (Levonorgestrel 15mcg + Ethinyl estradiol 30 mcg)	5 (16.67%)
• Depo-Provera (Medroxyprogesterone acetate 150mg/ml)	5 (16.67%)
	1 (3.33%)
Mode of administration	
• Oral	29 (96.67%)
• Injection	1 (3.33%)
Duration	
• ≥2 years	4 (13.33%)
• <2 years	26 (86.67%)
Frequency	
• Once a day	6 (20%)
• Twice a day	10 (33.33%)
• Thrice a day	14 (46.67%)
Dose	
• 1 tab/day	3 (10%)
• 2 tabs/day	8 (26.67%)
• 3 tabs/day	15 (50%)
• >4 tabs/day	4 (13.33%)

Results

Practices of Cross-sex hormone drug use

|	n=30 (%)

Source of knowledge about cross-sex hormone use
  • Friends
  • Physicians
	30 (100%)

Motivating factor which led them to take cross-sex hormone drug • Sex Orientation	30 (100%)

Self-prescribe cross-sex hormone therapy
  • Yes
  • No
	100%

Source of drugs used (where and how it was obtained)
  • Purchasing from a Pharmacy
  • Purchasing from a Health center
  • Purchasing thru Online store
  • Purchasing or given by Friends
	23 (76.67%)
	4 (13.33%)
	2 (6.67%)
	1 (3.33%)
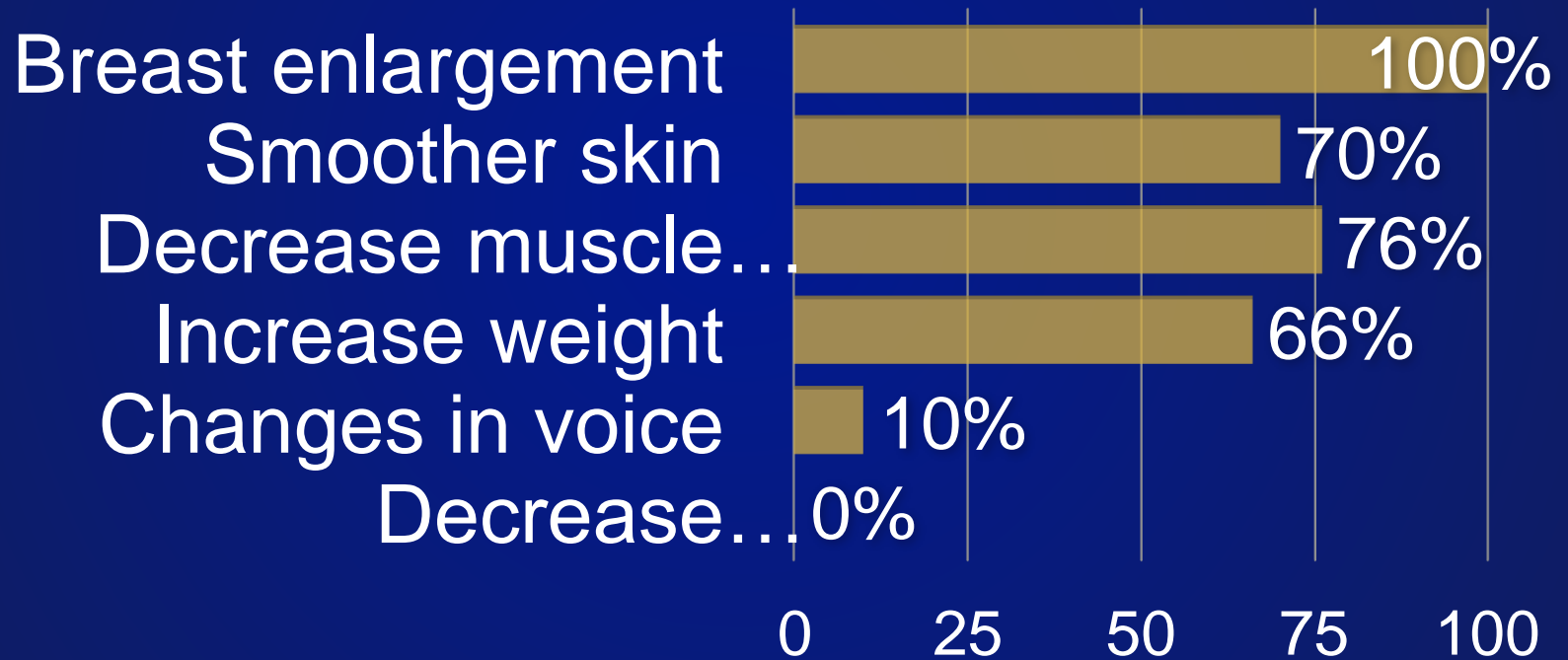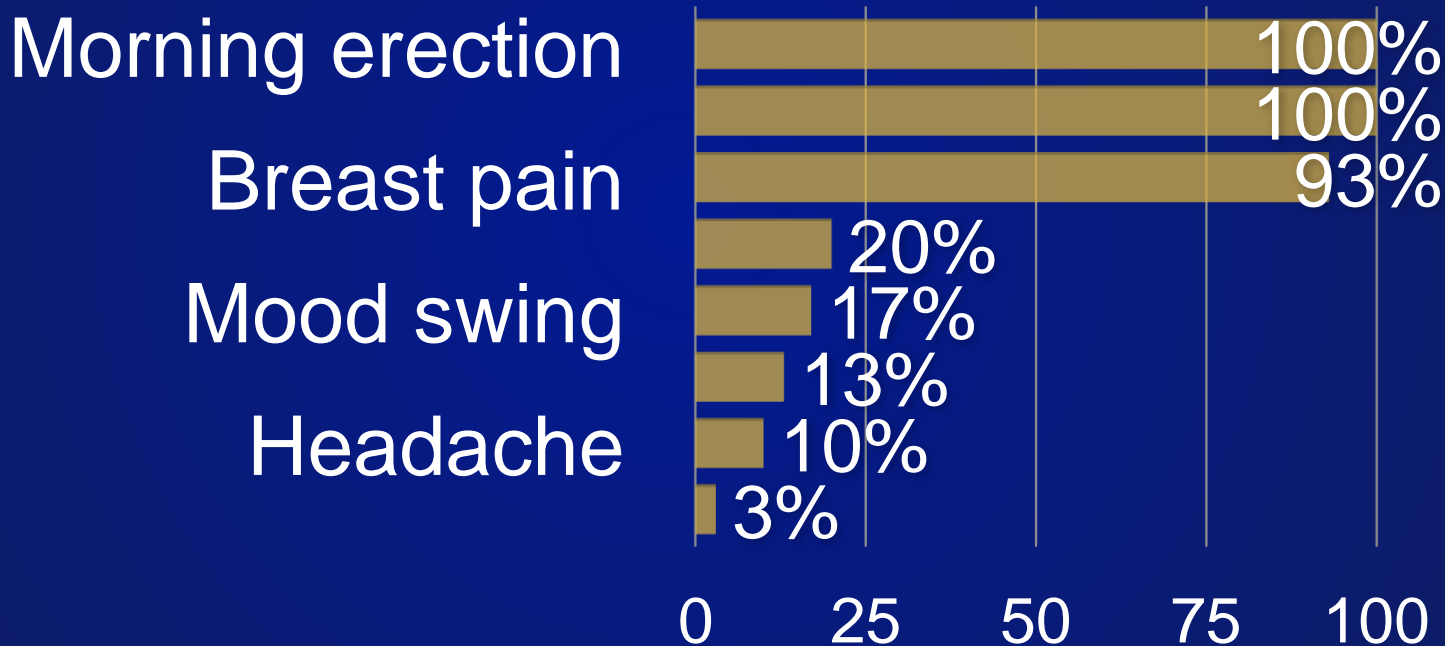
Results-Summary

Mean Age	26.9±5.92
Common Drug hormone Use	Oral Contraceptive Pills (Ethinyl Estrogen+Progesterone)
Route/Dose/Frequency	3 Tabs/Day PO (90mcg), <2 years
Side Effect	Decrease libido and morning erection, Breast pain
Clinical profile Abnormality	Overweight: 66%, Obese: 6.67% Prehypertension: 60-70%, Hypertension:10%
Metabolic profile abnormality	Prediabetic: 73%(HbA1c) Abnormal cholesterol: 20%
Practices	Self Prescribe:100%, Source of knowledge: Friends, Source of drugs: Local Pharmacy (76%)

Discussion

Recommendation	Practices of MtF
Recommended Drug Anti-androgen(eg spironolcatone) Estrogen (17B estradiol)	Oral contraceptive Progestin + estradiol Estrogen • Ethinyl estradiol (500x)[1]
Drug dose Antiandrogen (spironolactone) • 100-400mg/day Estrogen • 2-6 mg/day OD • 0.1-0.4 mg/day 2x a week	Dose • dose dependent on friends suggestion and internet source
Routine Monitoring • Every 3 months: Clinical and laboratory • then 1-2 years therafter	• No consultation before starting medication • No counseling or monitoring

Helgason et al 1982; Estrogen potency of oral replacement therapy

Conclusion

- Majority of MtF transgender Self-prescribe cross-sex hormone drug
- Tailor-make their own drug dose/administration base on their friends suggestion
- Cross-hormone drug use not recommended by international guidelines (WRATH)
- Prediabetics, Prehypertension and overweight was commonly noted among study participants

Recommendation

1. Conduct more rigid epidemiologic studies
   - Bigger population
   - Incorporate comparisons with those who have no cross-hormone therapy
   - analysis of variables to validate the clinical and metabolic result.

2. For the Department of health to conduct further investigation on the practices of MtF transgender to self-prescribe their medication.
   - Result will form policy regulation to regulate over-the-counter drugs especially OCP use.