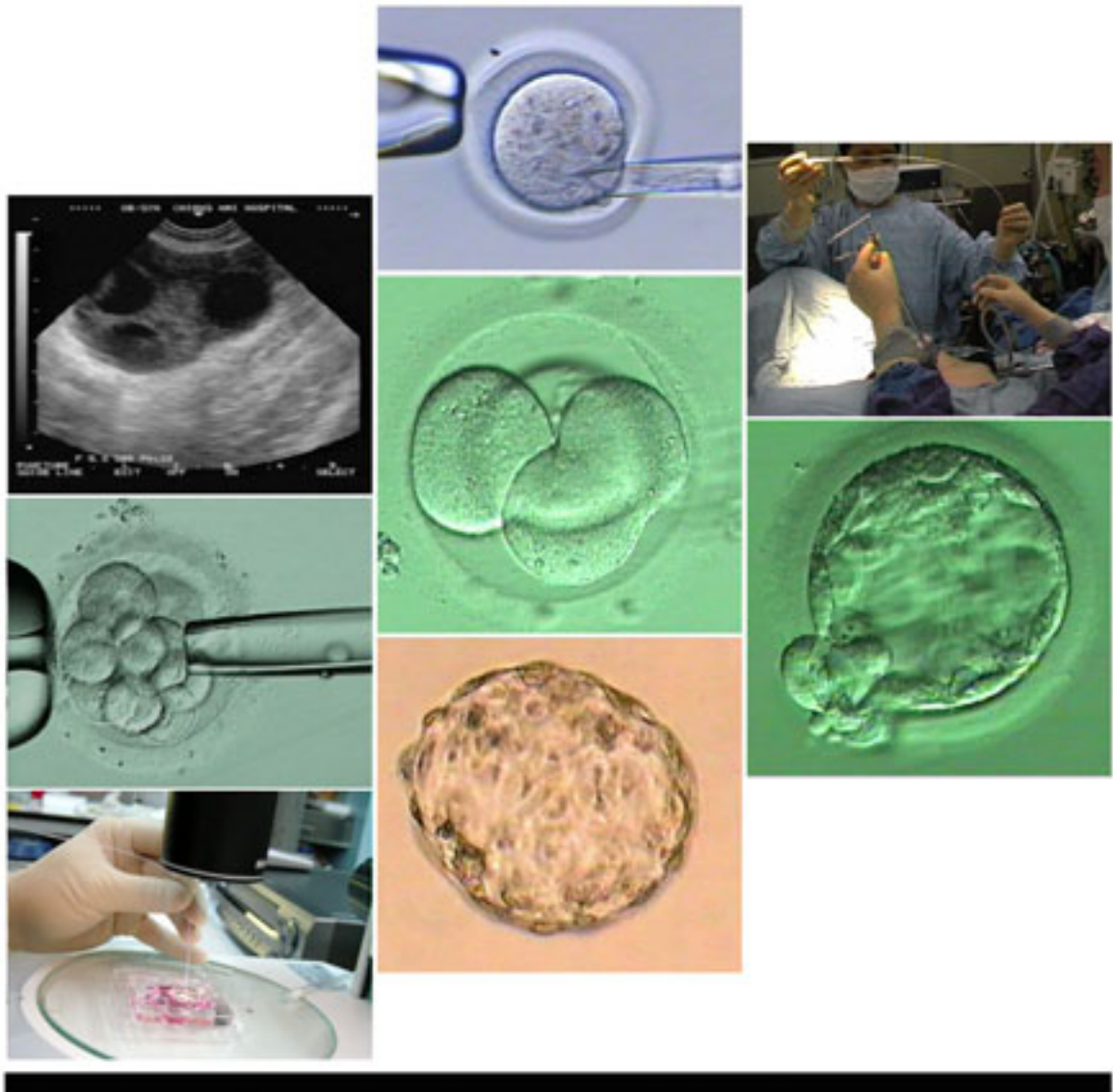


Annual Report

2010



Division of Reproductive Medicine
Department of Obstetrics & Gynecology
Faculty of Medicine, Chiang Mai University
Chiang Mai, Thailand

ANNUAL REPORT 2010

Division of Reproductive Medicine
Department of Obstetrics and Gynecology
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Chiang Mai University
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Data collecting and reported by:	Rung-aroon Sreshthaputra MSc.
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รายงานประจำปี พ.ศ. 2553

หน่วยเวชศาสตร์การเจริญพันธุ์
ภาควิชาสูติศาสตร์และนรีเวชวิทยา
คณะแพทยศาสตร์
มหาวิทยาลัยเชียงใหม่

หัวหน้าหน่วย

อาจารย์ประจำหน่วย

แพทย์หลักสูตรต่อยอด

พยาบาลประจำหน่วย

พยาบาลประจำห้องตรวจ

นักเทคนิคการแพทย์

รวบรวมและจัดทำรายงาน

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สุตารัตน์ สามฉิมโถม

รุ่งอรุณ เศรษฐบุตร

Preface

Obstetrics and Gynecology department has three major missions which are teaching, research and service. Every mission needs information for improving the quality. Our department divides into three major subspecialties: maternal fetal medicine, reproductive medicine and gynecologic oncology, and one new subspecialty which is urogynecology unit. Each subspecialty worked hard for improving their mission and has summarized the service part into the annual report. These reports are also publishing the full report on our departmental website. Please visit: <http://www.med.cmu.ac.th/dept/obgyn/>

This annual report 2010 on reproductive medicine, especially which related to reproductive surgery and infertility, has been successfully published with great contribution of Assoc. Professor Teraporn and his colleagues in reproductive medicine division. It reflects our reproductive medicine work and can be used for benchmarking especially for the one who involve in this field. I would like to make an appreciation and expression of thanks to my reproductive medicine colleagues for their dedication to our department.

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Preface

The Division of Reproductive Medicine is actively involved in the teaching and training of medical students, residents and fellows in the subspecialty of reproductive medicine. The division is also engaged in conducting researches related to the field of human reproduction. It serves as a resource and referral center for provincial and other tertiary care centers in Northern Thailand.

In this annual report, we summarized our services related to reproductive surgery and infertility that were provided in the year 2010. This report was compiled by Ms. Rung-aroon Sreshthaputra, our nurse coordinator, with the help of many other team members from the operating room, in-patient and outpatient department, and the assisted conception laboratory. I would like to thank all team members for their kind contribution and dedication.

It is hoped that this annual report will be useful as a reference, and a benchmark for future improvement of our services.

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PART I**NUMBER OF ATTENDED PATIENTS IN 2010**

- Infertile patients
- Gynecologic endocrine patients
- Endometriosis patients

I. Number of infertile patients

Month	New case (cases)	On going case (visits)
January	24	45
February	35	55
March	68	83
April	36	45
May	40	61
June	52	100
July	60	73
August	54	88
September	50	92
October	48	62
November	50	89
December	46	66
Total	563	859

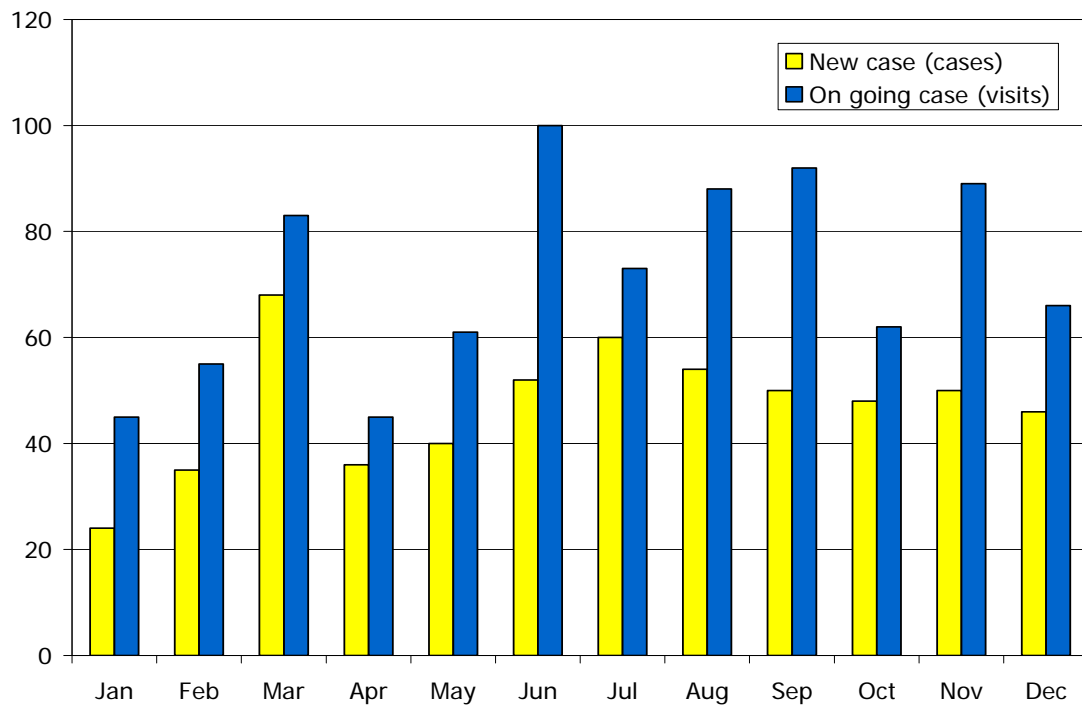


Figure I. Number of Infertile patients per month

II. Number of gynecologic endocrine patients

Month	New case (cases)	On going case (visits)
January	5	36
February	7	44
March	10	62
April	5	29
May	6	48
June	10	37
July	5	54
August	14	60
September	14	58
October	6	45
November	8	44
December	6	66
Total	96	583

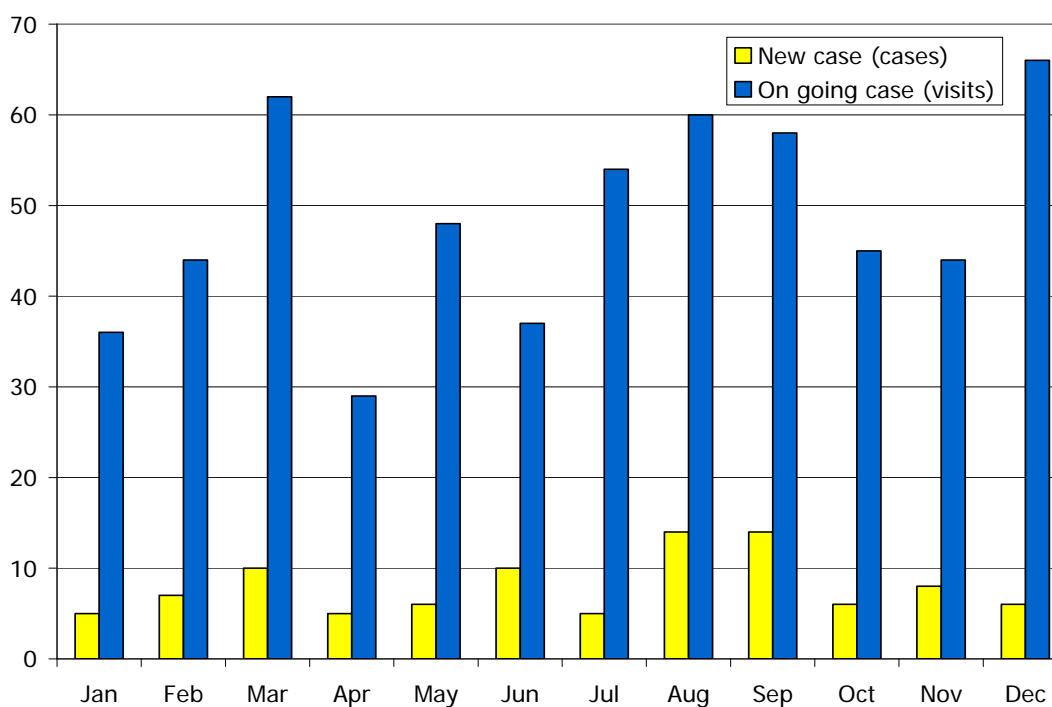


Figure II. Number of endocrine patient per month

III. Number of endometriosis patients

Month	New case (cases)	On going case (visits)
January	5	66
February	16	101
March	5	71
April	5	52
May	8	67
June	13	68
July	14	75
August	18	81
September	13	77
October	8	55
November	14	76
December	9	64
Total	128	853

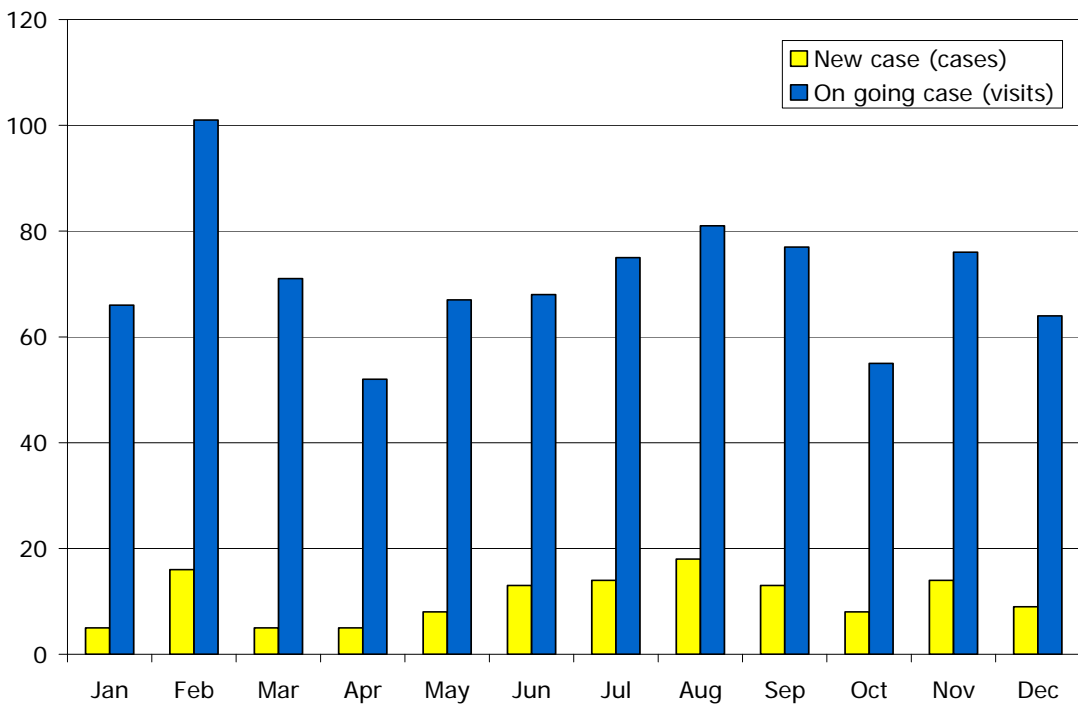


Figure III. Number of endometriosis patient per month

PART II**BASELINE CHARACTERISTICS AND DIAGNOSIS
OF
NEW & ON-GOING INFERTILE CASES IN 2010**

I. Age, duration of marriage & infertility

		Mean \pm SD	Range
Age	Female (years)	31.8 \pm 7.3	19 - 49
	Male (years)	35.1 \pm 5.3	22 - 60
Duration of marriage (months)		86.2 \pm 75.5	3 - 360
Duration of infertility (months)		56.1 \pm 46.1	3 - 240

II. Infertile status

Status	Female (cases)	Male (cases)
Primary infertility	324 (69.1 %)	284 (70.1 %)
Secondary infertility	145 (30.9 %)	121 (29.9 %)
Total	469	405

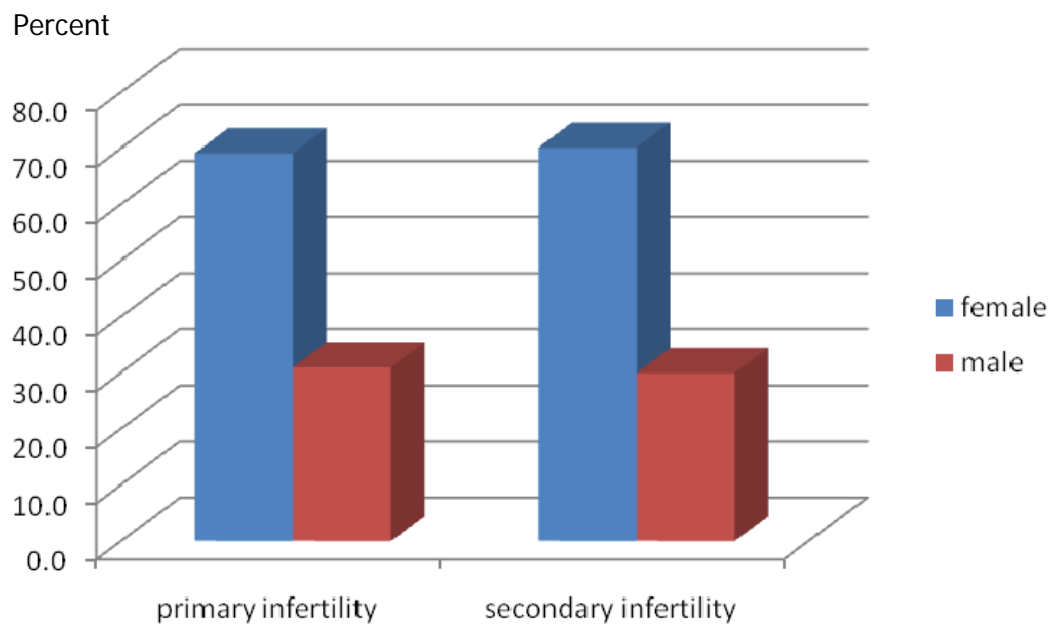


Figure IV. Infertile status

III. Diagnosis of male partners

Diagnosis	Case(s)	Percent
Normozoospermia	243	62.8
Asthenozoospermia	36	9.3
Oligozoospermia	27	7.0
Severe oligozoospermia	23	5.9
Azoospermia	21	5.4
Oligo-asthenozoospermia	15	3.9
Severe oligo-asthenozoospermia	14	3.6
HIV positive	5	1.3
Teratozoospermia	2	0.5
S/P Vasectomy	1	0.3
Total	387	100

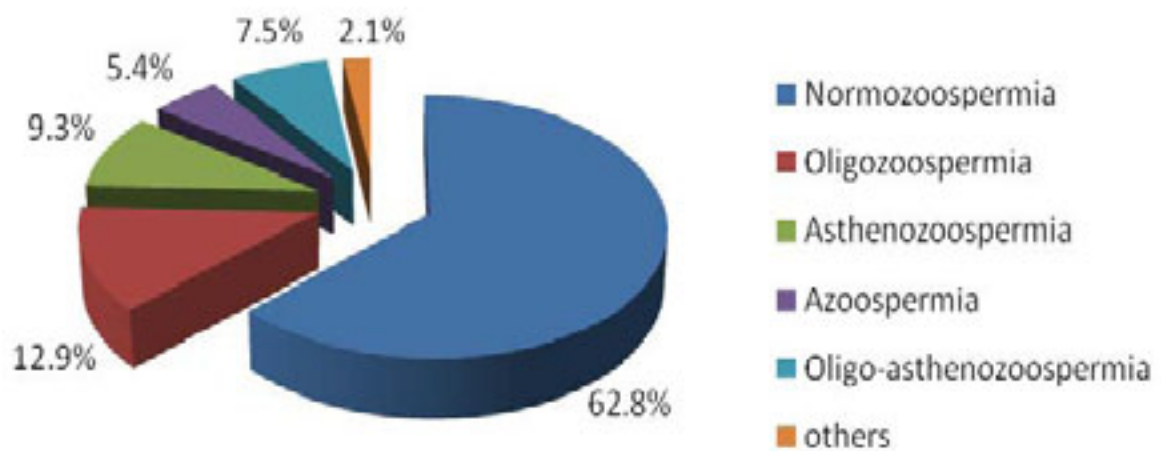


Figure V. Diagnosis of male partners

IV. Diagnosis of female partners

Diagnosis	Number	Percent
No demonstrable cause	78	27.0
Endometriosis (ES)	57	19.7
Post TR	30	10.4
PCOS	29	10.0
Unilateral / Bilat tubal occlusion	33	11.4
Ovulatory dysfunction	23	8.0
Myoma Uteri / Adenomyosis	10	3.5
Premature ovarian failure / poor responder	5	1.7
HIV serodiscordant	5	1.7
Pelvic adhesion	4	1.4
Habitual abortion	3	1.0
Intrauterine adhesion	3	1.0
ES and pelvic adhesion	2	0.7
S/P Salpingo-oophorectomy	2	0.7
Systemic causes	2	0.7
Septate uterus / Bicornuate uterus	2	0.7
Macro adenoma of pituitary gland	1	0.3
Total *	289	100.0

* Total number of female partners who had complete investigation

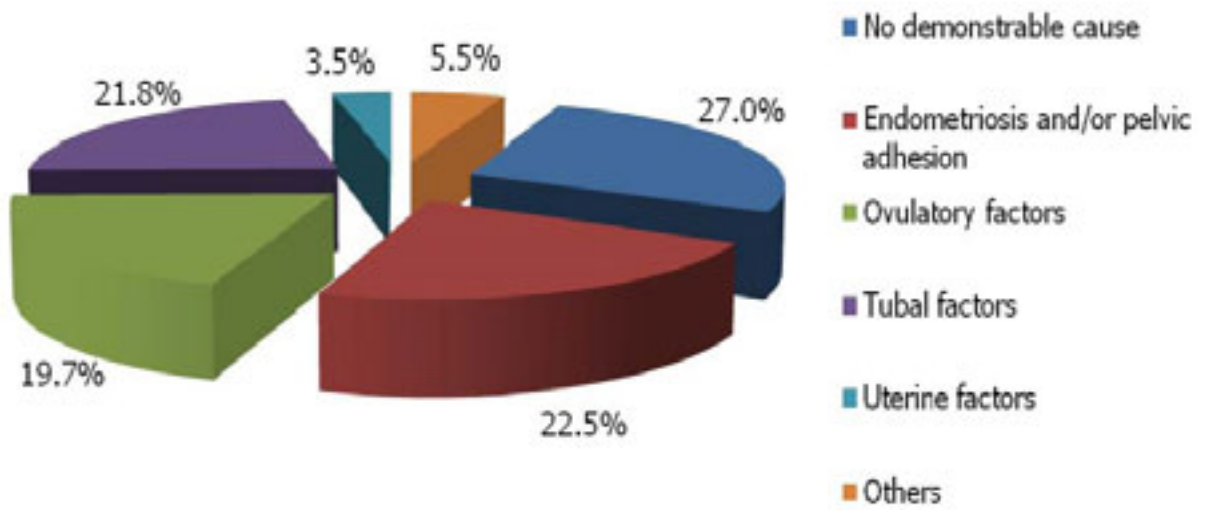


Figure VI. Diagnosis of female partners

PART III**TREATMENT OF INFERTILE COUPLES IN 2010**

I. Distribution of overall treatment of infertility in 2010

Treatment	Number (cycles)	Percent
Ovulation induction and timing sexual intercourse (OI+SI)	112	37.2
Intrauterine insemination (IUI)	107	35.5
In vitro fertilization and embryo transfer (IVF & ET)	15	5.0
Intracytoplasmic sperm injection (ICSI) with ejaculated spermatozoa	11	3.7
In vitro fertilization and ICSI (in the same cycle)	-	-
In vitro maturation (IVM)	-	-
Intracytoplasmic sperm injection (ICSI) with surgically retrieved spermatozoa	2	0.7
Intracytoplasmic sperm injection (ICSI) with donor spermatozoa	-	-
Therapeutic insemination using frozen donor spermatozoa (TDI)	18	6.0
Frozen-thawed embryos transfer (FET)	36	12.0
Gamete intrafallopian transfer (GIFT)	-	-
Zygote intrafallopian transfer (ZIFT)	-	-
Direct intraperitoneal insemination (DIPI)	-	-
Total cycles of treatment	301	100

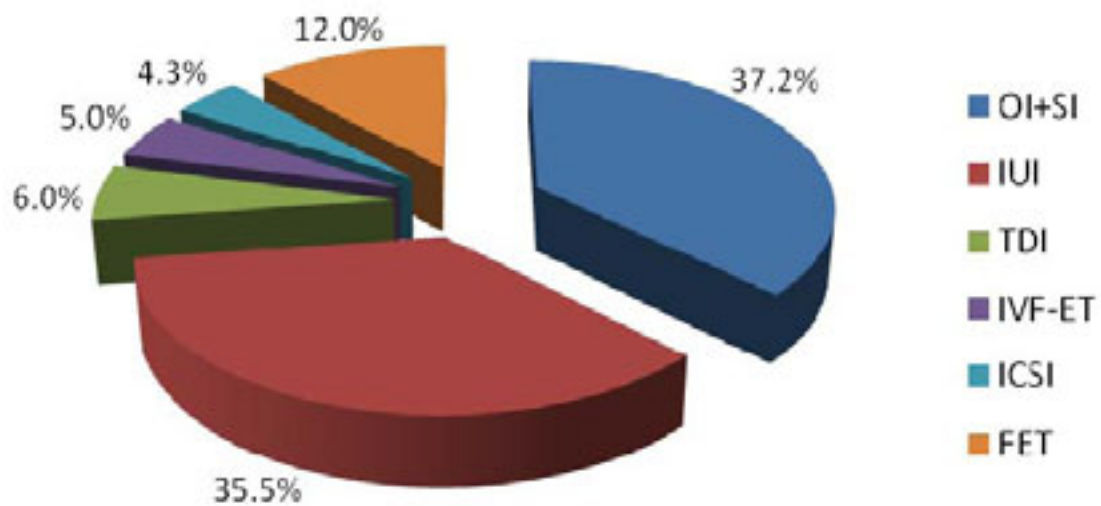


Figure VII. Treatment of infertility

II. Number of intrauterine insemination and A.R.T cycle per month

Month	IUI	TDI	IVF	IVF+ ICSI	IVM	ICSI	FET
January	7	2	-	-	-	3	3
February	9	-	3	-	-	1	2
March	9	-	3	-	-	1	2
April	4	-	-	-	-	-	3
May	4	5	2	-	-	1	6
June	11	4	-	-	-	2	-
July	5	4	2	-	-	2	4
August	8	3	1	-	-	1	4
September	17	-	2	-	-	1	4
October	10	-	1	-	-	-	4
November	16	2	1	-	-	1	2
December	7	-	-	-	-	-	2
Total	107	18	15	-	-	13^a	36
Clinical pregnancy rate (percent)	6.4^b	5.6^b	25.0^c	-	-	22.0^c	11.6^c

Remark: ^a embryo transfer was not done in 2 cases

^b pregnancy rate per cycle

^c pregnancy rate per transferred cycle

III. Pregnancy rate of IUI by sperm concentration at the time of IUI

Sperm analysis	Pregnancy rate
Normal ^a	8.3 %
Abnormal ^b	3.8 %

^a concentration of pre-washed sperm $\geq 10 \times 10^6$ / ml

^b concentration of pre-washed sperm $< 10 \times 10^6$ / ml

PART IV

**ASISSTED REPRODUCTIVE TECHNOLOGY
LABORATORY REPORT**

I. Fertilization rate in IVF and ICSI cycle & survival rate in frozen-thawed embryo transfer cycle

	mean \pm SD (per cycle)	Range (per cycle)	Total (per year)
IVF cycle			
Age of patient (years)	32.3 \pm 5.1	20 - 39	15 patients
Number of oocyte retrieved per cycle	12.2 \pm 7.1	4 - 25	176 oocytes
Number of normal fertilized embryos per cycle	8.5 \pm 4.9	2 - 21	118 embryos
Fertilization rate			68.7 %
ICSI cycle			
Age of patient (years)	34.8 \pm 4.2	27 - 41	13 patients
Number of over all oocyte retrieved per cycle	9.4 \pm 6.1	3 - 24	122 oocytes
Number of M II oocytes retrieved per cycle	6.9 \pm 3.6	3 - 14	66 oocytes
Number of normal fertilized embryos per cycle	5.3 \pm 2.6	2 - 10	38 oocytes
Fertilization rate			57.6 %
Frozen-thaw Embryo transfer ecycle (FET)			
Age of patient (years)	35.0 \pm 3.9	27 - 45	36 patients
Number of embryo freezing per cycle	4.5 \pm 3.6	0 - 15	90 embryos
Number of embryo thawing per cycle	2.8 \pm 0.8	2 - 5	87 embryos
Number of survived embryo after thawing per cycle	2.5 \pm 0.5	2 - 3	77 embryos
Survival rate of thawed embryos			88.5 %

III. A.R.T. outcome and pregnancy outcome by type of A.R.T. and age group of female patients

Fresh embryos transfer cycle

	IVF			ICSI		
Age (years)	Number of OPU cycle	Pregnancies	Deliveries	Number	Pregnancies	Deliveries
≤34	10	4	3	5	1	1
>34-39	5	0	0	6	1	1
≥40	0	0	0	2	0	0
total	15	4	3	13	2	2

Frozen embryos transfer cycle

	IVF			ICSI		
Age (years)	Number of OPU cycle	Pregnancies	Deliveries	Number	Pregnancies	Deliveries
≤34	11	3	3	6	1	1
>34 - 39	12	3	3	3	2	2
≥40	3	1	1	1	1	0
total	26	7	7	10	4	4

PART V**ENDOSCOPIC PROCEDURES
&
OTHER SURGERY**

I. Laparoscopic examination finding in infertile patients

Finding	Number	Percent
Normal finding with patent of both tubes	5	9.8
Patent of both tubes with		
minimal/ mild endometriosis	15	29.4
mild pelvic adhesion	2	3.9
myoma uteri	3	5.9
septate uterus	1	2.0
Unilateral tubal obstruction with		
minimal / mild endometriosis	1	2.0
pelvic adhesion	4	7.8
septate uteri	1	2.0
Unilateral cornual obstruction	1	2.0
Bilateral tubal obstruction with		
Mild / moderate endometriosis	1	2.0
s/p bilateral salpingectomy	4	7.8
Bilateral tubal obstruction S/P TR	13	25.5
Total	51	100

remark : lysis adhesion was done during the procedure in case of minimal and mild adhesion and cauterization was done in case of minimal and mild endometriosis

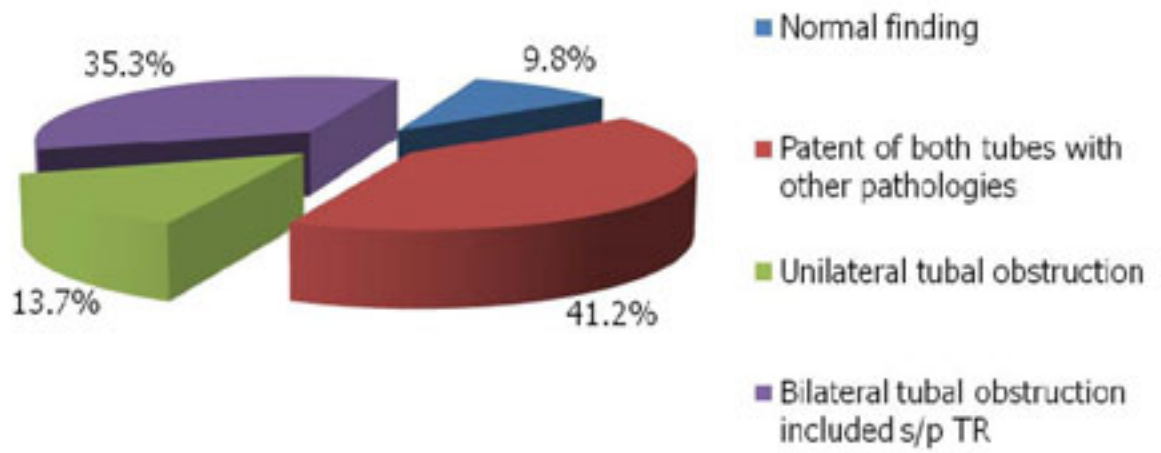


Figure VIII. Percent of laparoscopic findings in infertile patients

II. Laparoscopic examination finding in gynecologic patients with dysmenorrhea / chronic pelvic pain

Finding	Number
Normal finding	3
Endometriosis with / without pelvic adhesion *	11
adenomyosis	1
Total	15

* cauterization and lysis adhesion was done during the procedure

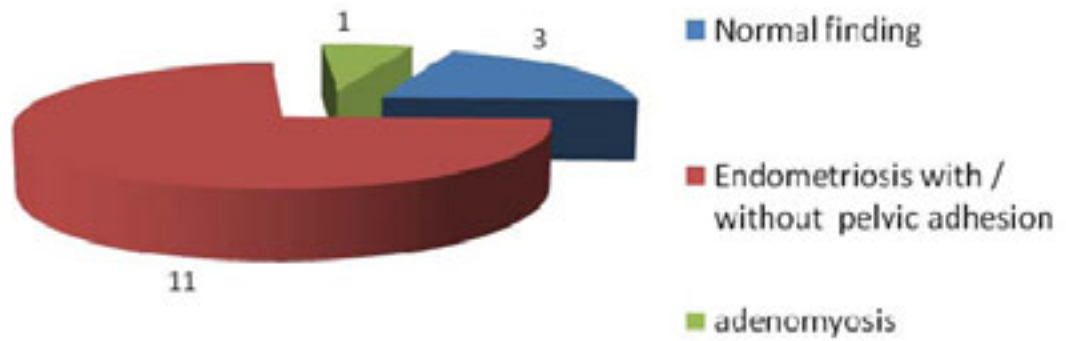


Figure IX. Number of laparoscopic finding in gynecologic patients

III. Hysteroscopic finding & procedures in infertile patients, recurrent pregnancy loss patients

Finding or Procedure	Number	Percent
WNL	31	43.1
Endometrial polyp ^a	17	23.6
Submucous myoma uteri ^b	7	9.7
Cervical stenosis ^c	3	4.2
Septate uterus ^d	5	6.9
Arcuate uterus	2	2.8
Uterine didelphis	2	2.8
Bicornuate uterus	1	1.4
Transverse vaginal septum	1	1.4
Segmental agenesis of cervix	1	1.4
Retained pieces of placenta with diagnosis of recurrent pregnancy loss	1	1.4
Infertility with bilateral cornual obstruction ^e	1	1.4
	72	100

during the procedure;

- ^a polypectomy was done
- ^b resection of myoma was done
- ^c cervical dilatation was done
- ^d resection of uterine septum was done
- ^e cornual catheterization was done

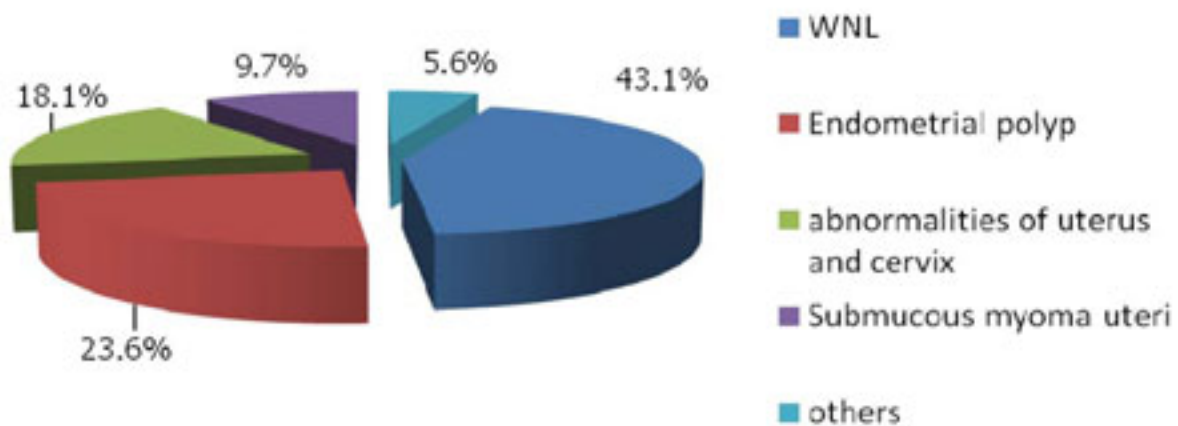


Figure X. Hysteroscopic finding in the infertile patients and recurrent pregnancy loss patients

IV. Hysteroscopic examination & treatment in gynecologic patients

Diagnosis	Treatment	Number
AUB with endometrial hyperplasia	Curettage	7
AUB with endometrial polyp	Polypectomy	5
Submucous myoma	Resection of myoma and curettage	5
Intrauterine adhesion	Resection of adhesion and retained IUD	5
Hypermenorrhea	Endometrial ablation	1
Total		23

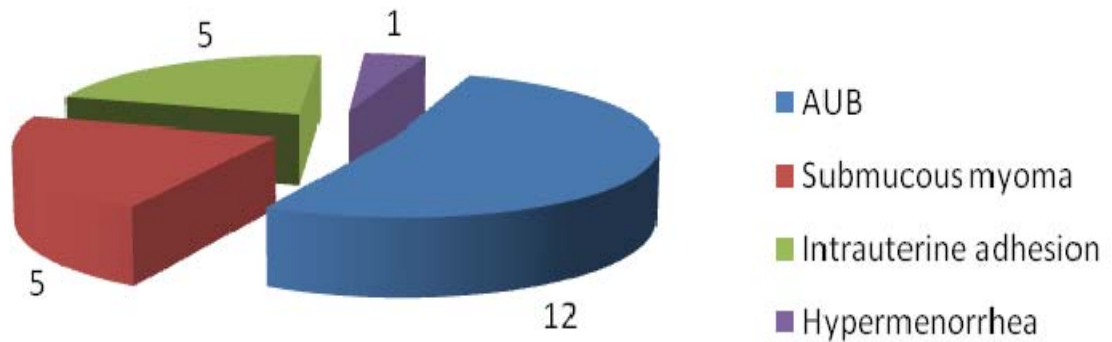


Figure XI Number of patients had hysteroscopic examination

V. Laparoscopic surgery procedure of infertile & gynecologic patients

Procedure	Diagnosis / finding	Number	Percent
Unilateral ovarian cystectomy	Ovarian cyst	17	21.8
Unilateral ovarian cystectomy with salpingectomy and/or fimbrioplasty	Ovarian cyst with hydrosalpinx	4	5.1
Unilateral ovarian cystectomy with lysis adhesion and dye test	Ovarian cyst with pelvic adhesion	9	11.5
Bilateral ovarian cystectomy with / without lysis adhesion	Bilateral ovarian cyst / endometrioma	16	20.5
Lysis adhesion	Chronic pelvic pain	3	3.8
	Infertility with pelvic adhesion	7	9.0
Salpingectomy / Salpingostomy / Remove conceptive product	Tubal pregnancy	4	5.1
TLH +/- BSO	Myoma uteri	4	5.1
Bilateral fimbrioplasty with lysis adhesion	Bilateral hydrosalpinx	1	1.3
Fimbrioneostomy	Hydrosalpinx	1	1.3
Salpingectomy and lysis adhesion +/- fimbrioplasty	Severe pelvic adhesion	5	6.4
Salpingo-oophorectomy with lysis adhesion	Endometrioma	4	5.1
LAVH	Myoma uteri	1	1.3
IUD removal	IUD perforation	1	1.3
Aspiration of ovarian cyst and lysis adhesion	Endometrioma and pelvic	1	1.3
Total		78	100

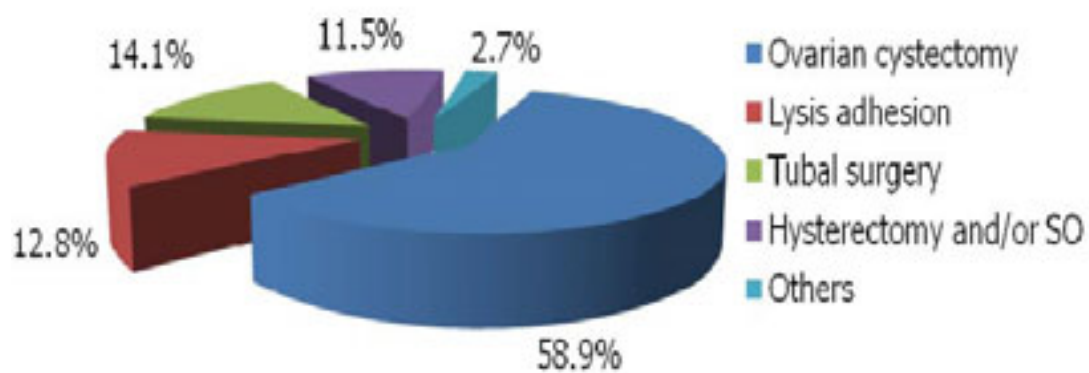


Figure XII Percent of laparoscopic surgery procedure

VI. Explor laparotomy and other surgery of infertile & gynecologic patients

Procedure	Diagnosis / finding	Number
TAH+BSO	Severe endometriosis / Myoma uteri	6
TAH +/- cystectomy +/-SO	Myoma uteri +/- endometrioma	12
TAH	Chronic pelvic pain / Adenomyosis / Myoma uteri	4
Reverse TR	S/P post TR	12
Vaginoplasty	Uterine didelphis	1
	Vaginal stenosis with hemotocolpos	1
	Transverse vaginal septum	1
Hysterectomy with right salpingectomy	Segmental agenesis of cervix with right hydrosalpinx	1
Lysis adhesion with salpingo-oophorectomy salpingectomy ovarian cystectomy and salpingectomy loculated fluid drainage	Pelvic adhesion with ovarian cyst	1 ^a
	Pelvic adhesion with hydrosalpinx	1
	Pelvic adhesion with ovarian cyst with hydrosalpinx	2 ^b
	Pelvic adhesion	1
Myomectomy +/- Ovarian cystectomy	Myoma uteri +/- ovarian cystectomy	15 ^c
Transvaginal aspiration of endometrioma	Endometrioma	1
Surgical sperm recovery	Azoospermia	3
Total		62

^{a, b} failed laparoscopic surgery

^c failed laparoscopic surgery in 2 cases

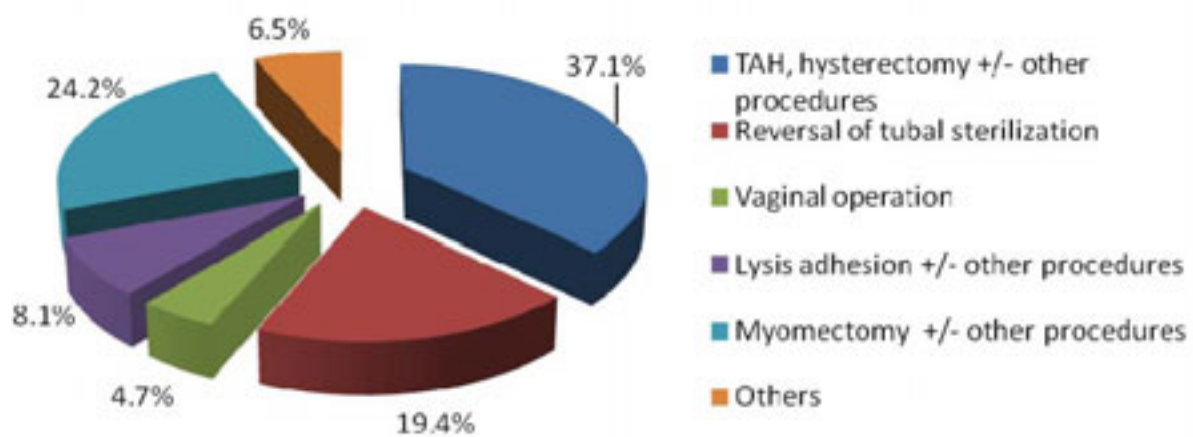


Figure XIII Percent of Explor laparotomy surgery and others

PART V**GYNECOLOGIC ENDOCRINE PATIENTS AND OTHERS**

Distribution of gynecologic endocrine patients and others

Diagnosis	No. of cases	
	New case (cases)	On going (visits)
Hyperprolactinemia / Macro or Microadenoma of pituitary gland / Prolactinoma / Pituitary adenoma	15	121
PCOs / Chronic anovulation / oligo-ovulation	34	158
Primary / Secondary amenorrhea	6	42
Mullerian agenesis	-	1
Premature ovarian failure	-	35
Precocious puberty	1	2
Recurrent pregnancy loss	20	30
AUB / DUB	9	49
Premature menopause / Surgical menopause	1	45
Gonadal dysgenesis	-	11
Turner's syndrome	1	25
Hypogonadotropic hypogonadism	-	11
Panhypopituitarism	1	6
Asherman's syndrome/ Ut. Synechia	2	13
Testicular feminization	-	8
Empty stella syndrome	1	4
AVM at uterus	1	-
Mosaic turner	-	1
Mccune Albright syndrome	-	3
Kallman syndrome	-	2
Septate uterus	1	5
Uterine didelphis	1	6
Transverse vaginal septum	1	3
Tumor of ovary	2	
Hypothyroidism	-	2
Total	96	583