STANDARD TREATMENT WORKFLOW (STW)

Female Infertility

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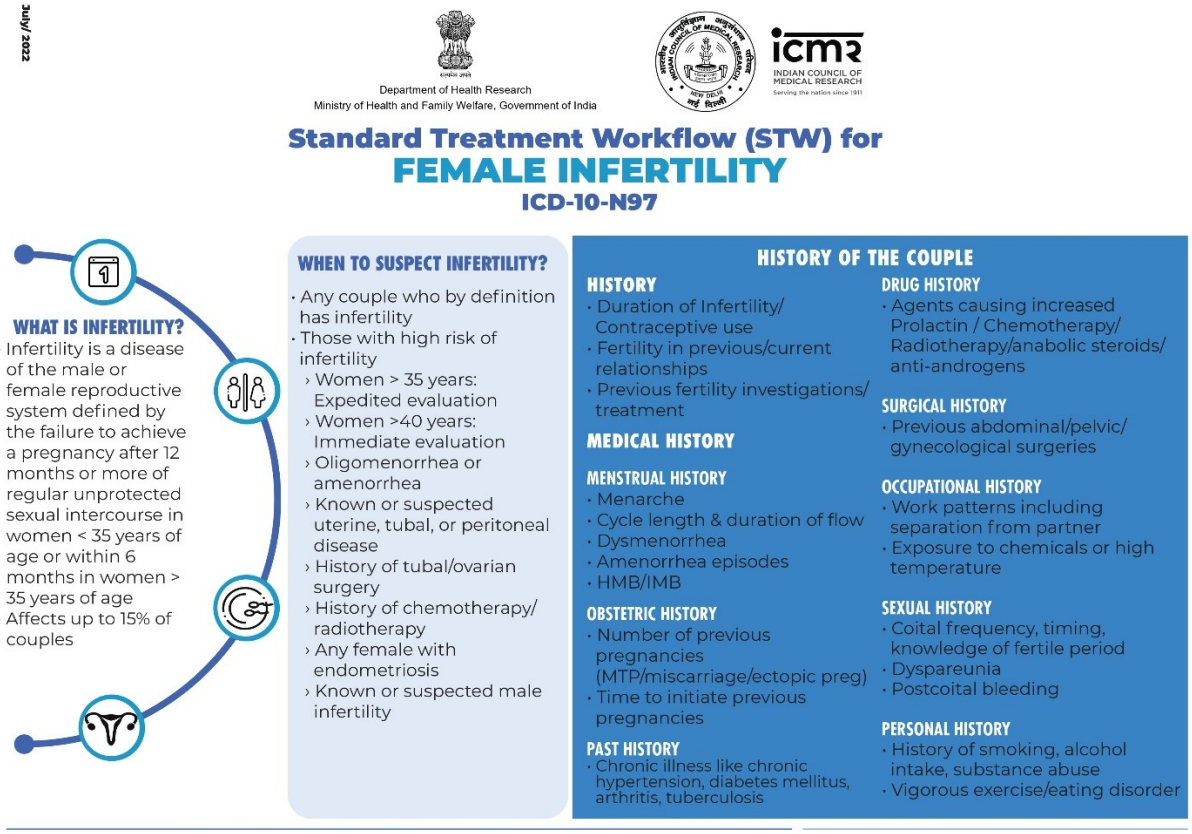

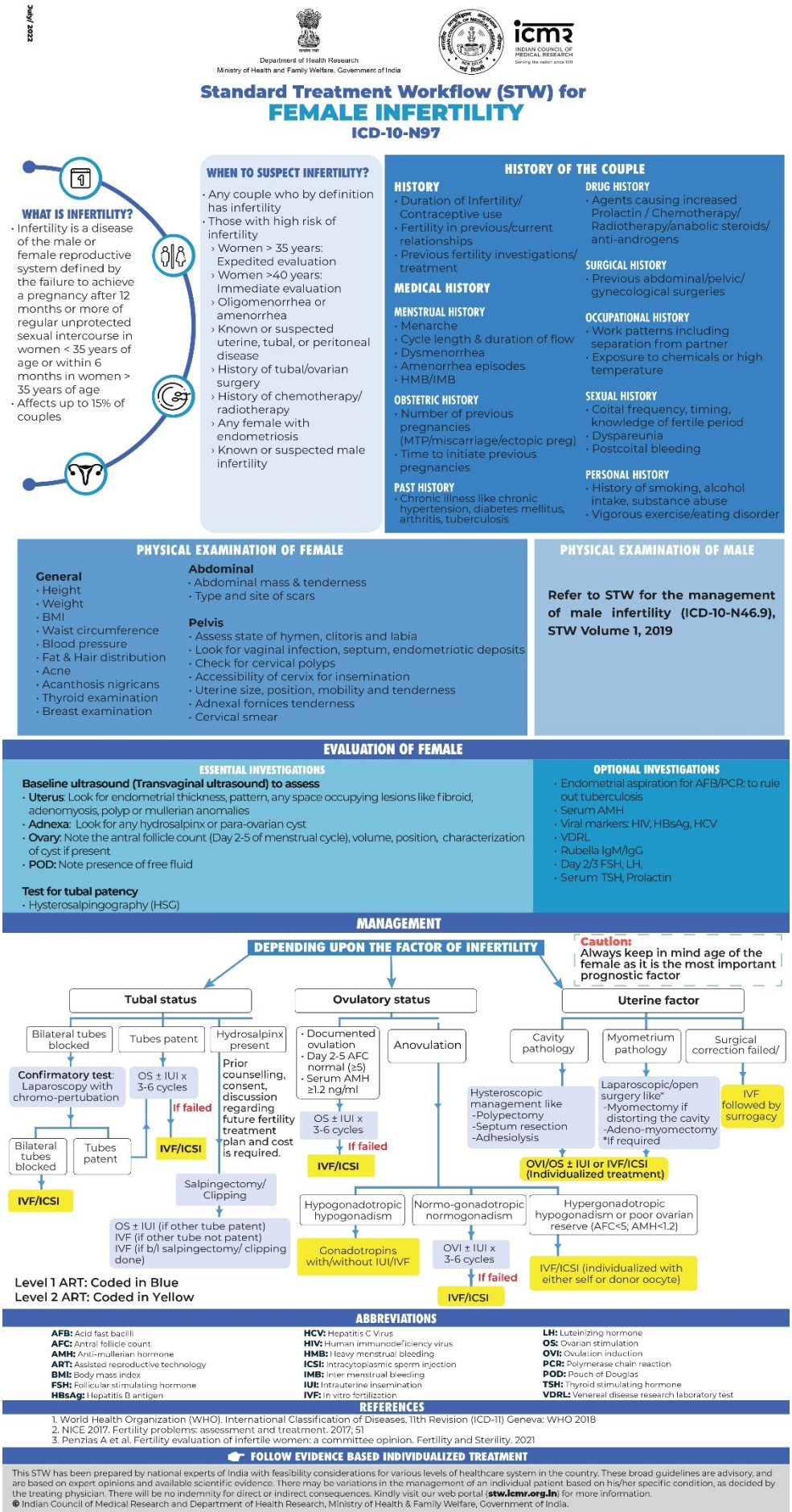
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Standard Treatment Workflow (STW) for
FEMALE INFERTILITY
ICD-10-N97
WHAT IS INFERTILITY?
· Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse in women < 35 years of age or within 6 months in women > 35 years of age
· Affects up to 15% of couples
WHEN TO SUSPECT INFERTILITY?
· Any couple who by definition has infertility
· Those with high risk of infertility
› Women > 35 years: Expedited evaluation
› Women >40 years: Immediate evaluation
› Oligomenorrhea or amenorrhea
› Known or suspected uterine, tubal, or peritoneal disease
› History of tubal/ovarian surgery
› History of chemotherapy/ radiotherapy
› Any female with endometriosis
› Known or suspected male infertility
HISTORY OF THE COUPLE
HISTORY
· Duration of Infertility/ Contraceptive use
· Fertility in previous/current relationships
· Previous fertility investigations/ treatment
MEDICAL HISTORY
MENSTRUAL HISTORY
· Menarche
· Cycle length & duration of flow
· Dysmenorrhea
· Amenorrhea episodes
· HMB/IMB
OBSTETRIC HISTORY
· Number of previous pregnancies (MTP/miscarriage/ectopic preg)
· Time to initiate previous pregnancies
PAST HISTORY
· Chronic illness like chronic hypertension, diabetes mellitus, arthritis, tuberculosis
DRUG HISTORY
· Agents causing increased Prolactin / Chemotherapy/ Radiotherapy/anabolic steroids/ anti-androgens
SURGICAL HISTORY
· Previous abdominal/pelvic/ gynecological surgeries
OCCUPATIONAL HISTORY
· Work patterns including separation from partner
· Exposure to chemicals or high temperature
SEXUAL HISTORY
· Coital frequency, timing, knowledge of fertile period
· Dyspareunia
· Postcoital bleeding
PERSONAL HISTORY
· History of smoking, alcohol intake, substance abuse
· Vigorous exercise/eating disorder
PHYSICAL EXAMINATION OF FEMALE
General
· Height
· Weight
· BMI
· Waist circumference
· Blood pressure
· Fat & Hair distribution
· Acne
· Acanthosis nigricans
· Thyroid examination
· Breast examination
Abdominal
· Abdominal mass & tenderness
· Type and site of scars
Pelvis
· Assess state of hymen, clitoris and labia
· Look for vaginal infection, septum, endometriotic deposits
· Check for cervical polyps
· Accessibility of cervix for insemination
· Uterine size, position, mobility and tenderness
· Adnexal fornices tenderness
· Cervical smear
PHYSICAL EXAMINATION OF MALE
Refer to STW for the management of male infertility (ICD-10-N46.9), STW Volume 1, 2019
EVALUATION OF FEMALE
ESSENTIAL INVESTIGATIONS
Baseline ultrasound (Transvaginal ultrasound) to assess
· Uterus: Look for endometrial thickness, pattern, any space occupying lesions like fibroid, adenomyosis, polyp or mullerian anomalies
· Adnexa: Look for any hydrosalpinx or para-ovarian cyst
· Ovary: Note the antral follicle count (Day 2-5 of menstrual cycle), volume, position, characterization of cyst if present
· POD: Note presence of free fluid
Test for tubal patency
· Hysterosalpingography (HSG)
OPTIONAL INVESTIGATIONS
· Endometrial aspiration for AFB/PCR: to rule out tuberculosis
· Serum AMH
· Viral markers: HIV, HBsAg, HCV
· VDRL
· Rubella IgM/IgG
· Day 2/3 FSH, LH,
· Serum TSH, Prolactin
MANAGEMENT
DEPENDING UPON THE FACTOR OF INFERTILITY
Caution: Always keep in mind age of the female as it is the most important prognostic factor
Tubal status
Bilateral tubes blocked
Confirmatory test: Laparoscopy with chromo-pertubation
Bilateral tubes blocked
IVF/ICSI
Tubes patent
OS ± IUI x 3-6 cycles
If failed
IVF/ICSI
Hydrosalpinx present
Prior counselling, consent, discussion regarding future fertility treatment plan and cost is required.
Salpingectomy/ Clipping
OS ± IUI (if other tube patent)
IVF (if other tube not patent)
IVF (if b/l salpingectomy/ clipping done)
Ovulatory status
· Documented ovulation
· Day 2-5 AFC normal (≥5)
· Serum AMH ≥1.2 ng/ml
OS ± IUI x 3-6 cycles
If failed
IVF/ICSI
Anovulation
Hypogonadotropic hypogonadism
Gonadotropins with/without IUI/IVF
Normo-gonadotropic normogonadism
OVI ± IUI x 3-6 cycles
If failed
IVF/ICSI
Uterine factor
Cavity pathology
Hysteroscopic management like -Polypectomy -Septum resection -Adhesiolysis
Myometrium pathology
Laparoscopic/open surgery like* -Myomectomy if distorting the cavity -Adeno-myomectomy *If required
Surgical correction failed/
IVF followed by surrogacy
OVI/OS ± IUI or IVF/ICSI (Individualized treatment)
Hypergonadotropic hypogonadism or poor ovarian reserve (AFC<5; AMH<1.2)
IVF/ICSI (individualized with either self or donor oocyte)
Level 1 ART: Coded in Blue
Level 2 ART: Coded in Yellow
ABBREVIATIONS
AFB: Acid fast bacilli
AFC: Antral follicle count
AMH: Anti-mullerian hormone
ART: Assisted reproductive technology
BMI: Body mass index
FSH: Follicular stimulating hormone
HBsAg: Hepatitis B antigen
HCV: Hepatitis C Virus
HIV: Human immunodeficiency virus
HMB: Heavy menstrual bleeding
ICSI: Intracytoplasmic sperm injection
IMB: Inter menstrual bleeding
IUI: Intrauterine insemination
IVF: In vitro fertilization
LH: Luteinizing hormone
OS: Ovarian stimulation
OVI: Ovulation induction
PCR: Polymerase chain reaction
POD: Pouch of Douglas
TSH: Thyroid stimulating hormone
VDRL: Venereal disease research laboratory test
REFERENCES
1. World Health Organization (WHO). International Classification of Diseases, 11th Revision (ICD-11) Geneva: WHO 2018
2. NICE 2017. Fertility problems: assessment and treatment. 2017; 51
3. Penzias A et al. Fertility evaluation of infertile women: a committee opinion. Fertility and Sterility. 2021
FOLLOW EVIDENCE BASED INDIVIDUALIZED TREATMENT
This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (stw.icmr.org.in) for more information.
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