The following CME was held on May 27, 2007 at Hotel Krishna, Jabalpur. The program was sponsored by MILMET division of Sun Pharma. The CME was followed by dinner.

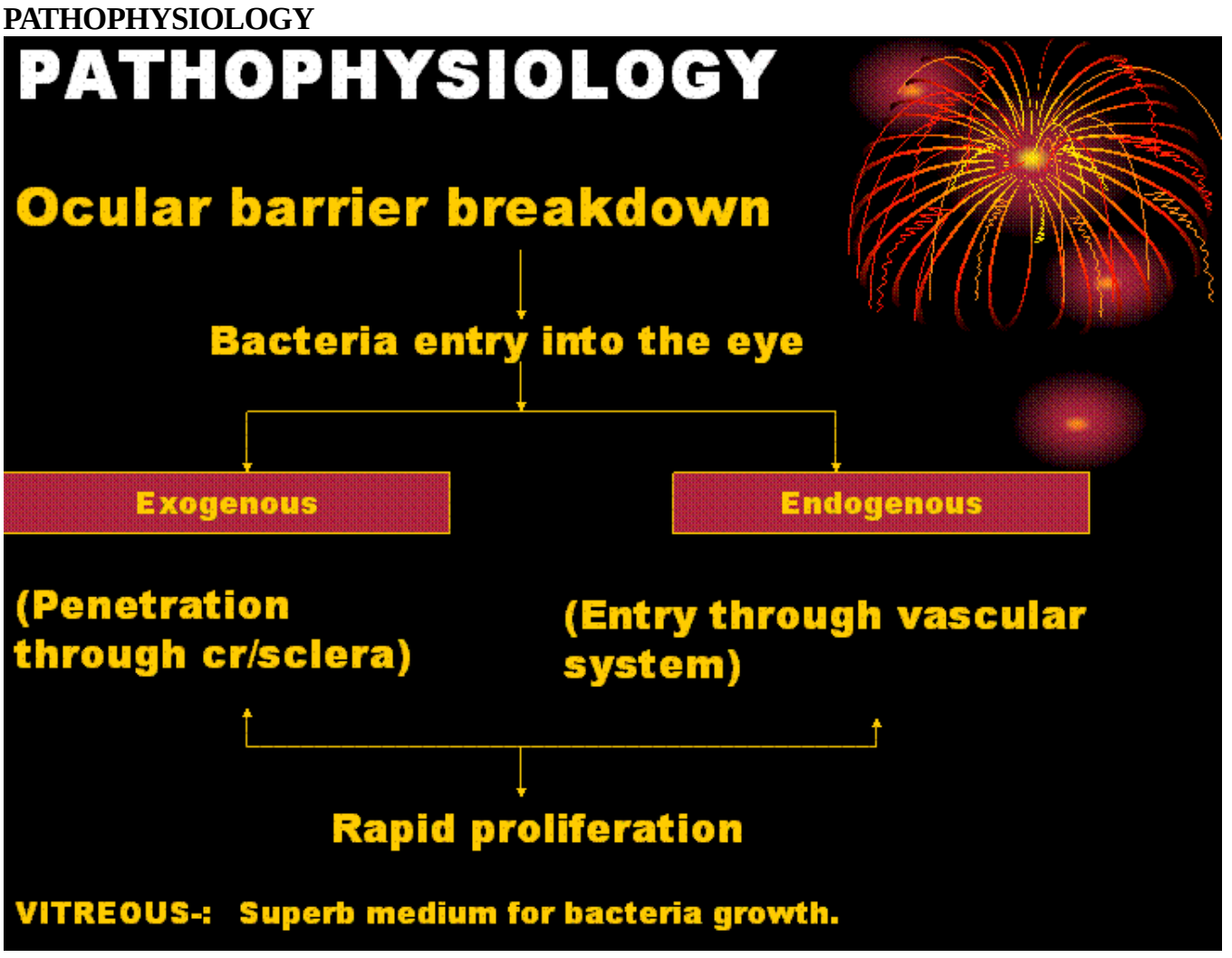
BACTERIAL ENDOPHTHALMITIS

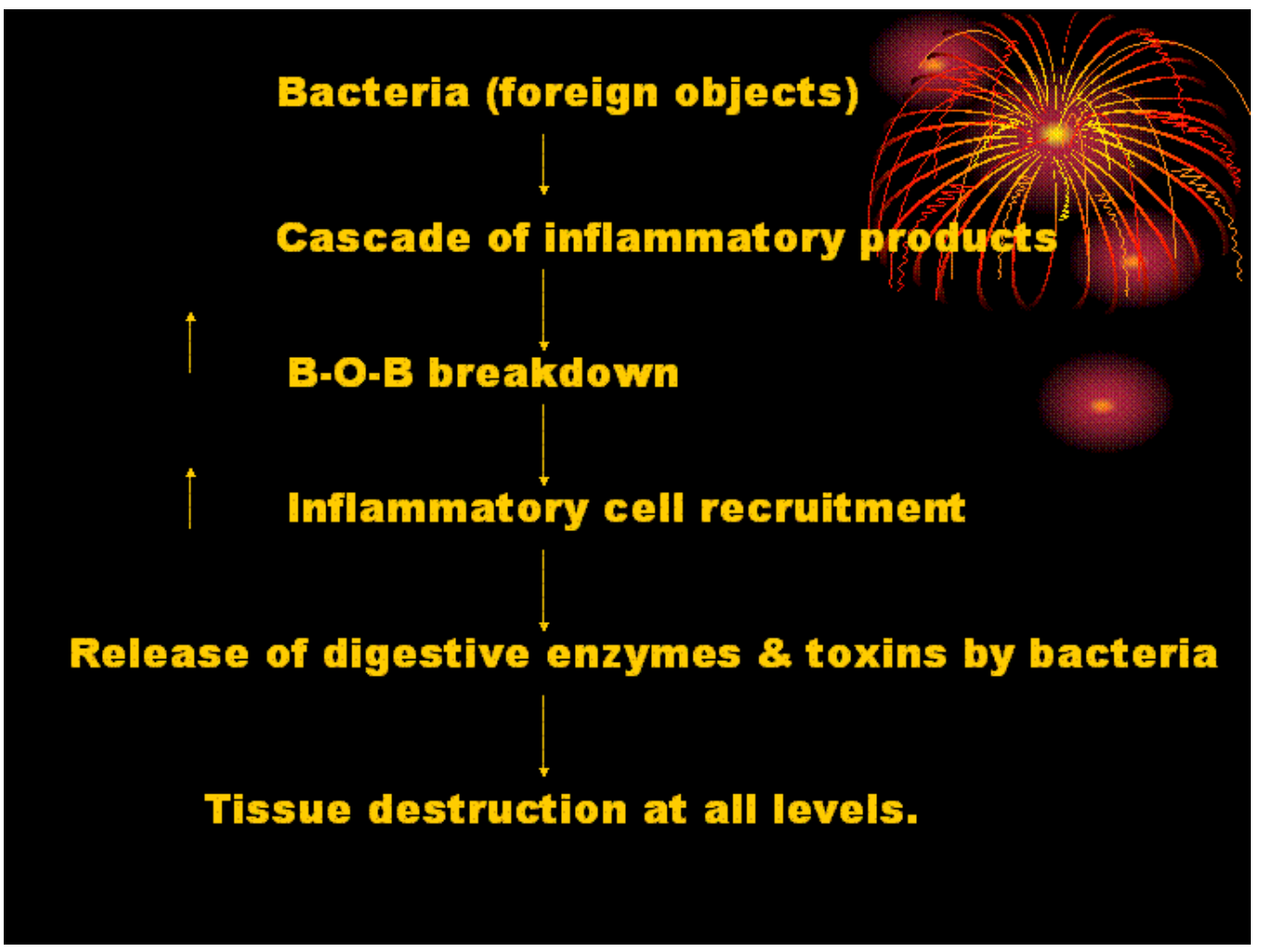
DR.SHIKHA DUBEY

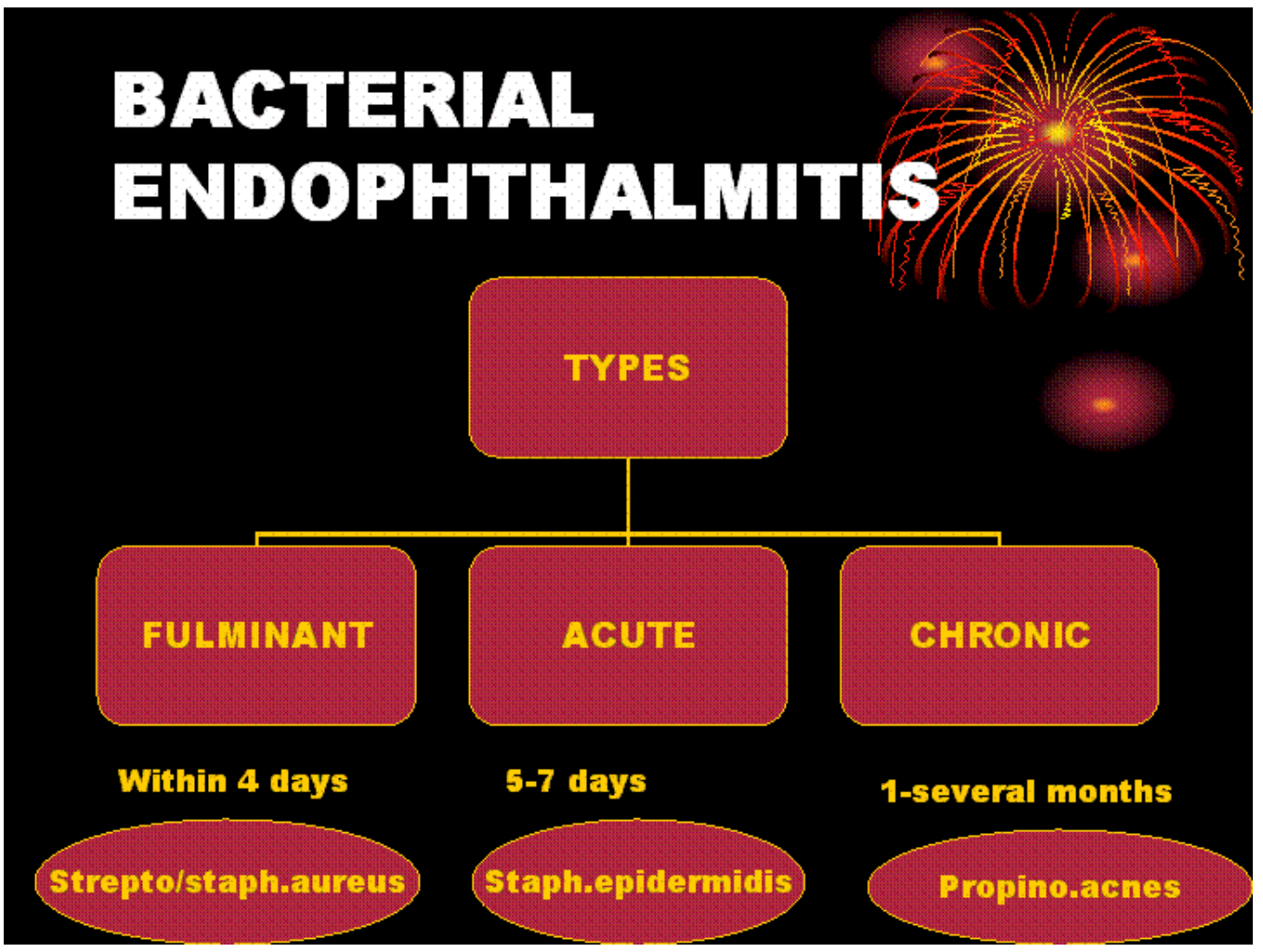
ENDOPHTHALMITIS

" An inflammation of the inner coats of the eye associated with exudates in the vitreous which may be infectious (bacterial/fungal)or non-infectious in origin "

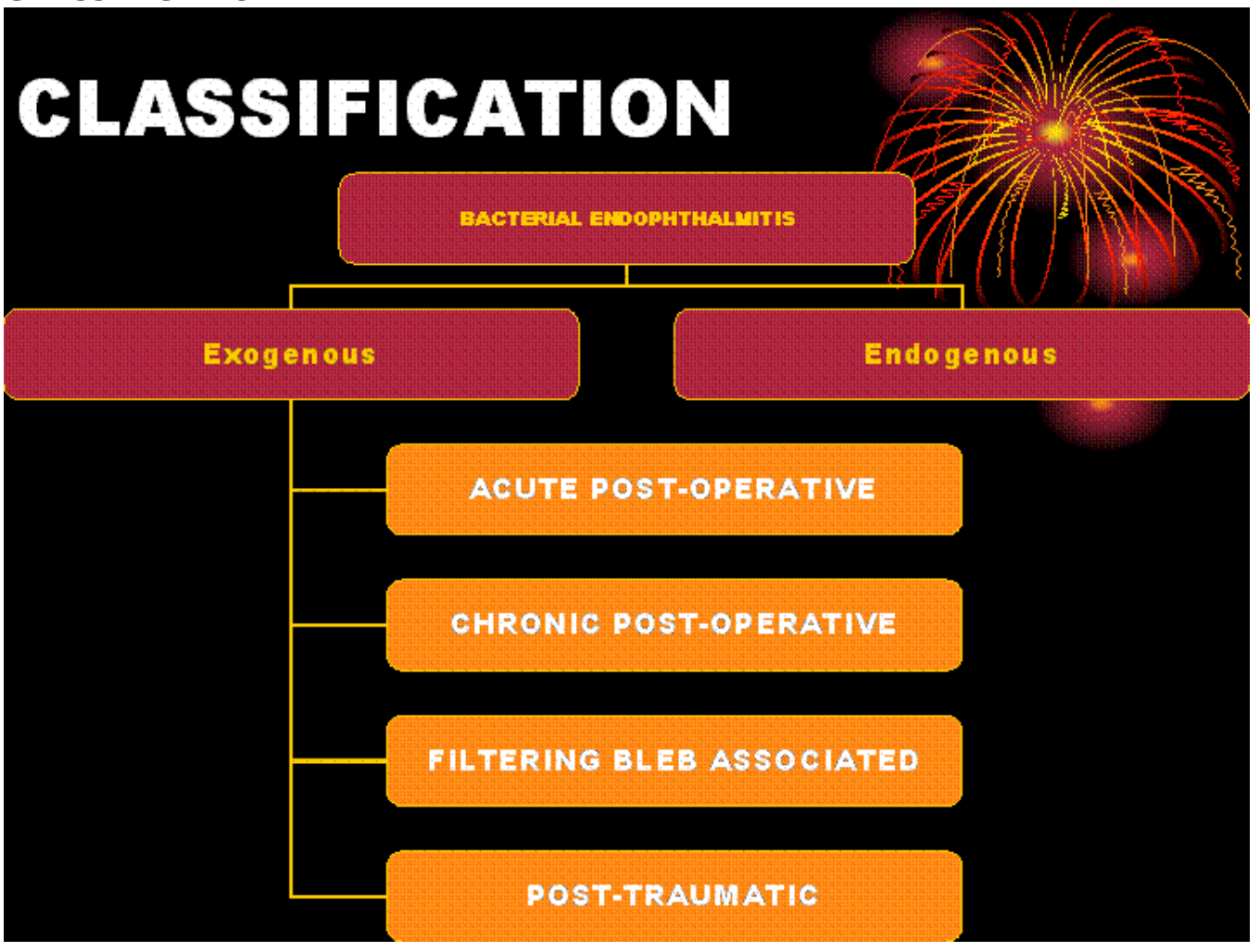
PATHOPHYSIOLOGY







BACTERIAL ENDOPHTHALMITIS
CLASSIFICATION



EXOGENOUS-:

Acute post-operative-
2-10 days after surgery.
Sudden onset.
Visual loss greater than expected in the usual post operative course.
Ocular pain (75%)
Redness, photophobia, discharge
Anti-Inflammatory drugs blunt the severity of the disease.

Chronic pseudophakic post-operative-:

*Delayed onset
*Chronic indolent course
*Mild-moderate inflammatory red eye
*Reduced Vn, photophobia
*Exclude fungal species.
*Repeated attacks despite treatment.

Filtering bleb associated-:

C/F similar to acute
post-op. infection with purulent bleb.
Post-traumatic-:

* H/O penetrating injury present .
* Rapid progression.

ENDOGENOUS

No H/O ocular surgery present.
Vascular spread of organisms from a distant source of infection.

CLINICAL EXAMINATION

Lid edema.
Conj. Hyperemia.
Chemosis.
Corneal edema.
Anterior chamber_cells & flare.
HYPOPYON.
Fibrin membrane.
Iris pattern lost .
Early posterior synechiae.
Pupil reaction-sluggish/absent.
Dense ,discrete ,confluent yellowish,vitreous exudation of varying degree.

CLINICAL EXAMINATION:-
Wound dehiscence, suture abscess.
Status of lens/IOL.
OCULAR MEDIA CLARITY (I/O)
Grade 1- Media clarity, 6/12 view of the retina.
Grade 2- Media clarity <6/12, can visualize second order retinal vessels.
Grade 3- Can see only 1st order vessels.
Grade 4- Faint outline of Disc visible; red reflex present.
Grade 5- Red reflex absent.

INVESTIGATIONS

*Vitreous aspiration-smears,cultures.

*B-scan USG-presence of RD, CD ,ERM RIOFB.
Choice of Antimicrobial Agent
When endophthalmitis is initially suspected, the pathogen is not typically known, so the choice of antimicrobial agent must be made empirically. Unfortunately, clinical features of infection and culture results often do not correlate adequately to guide the choice of antibiotics upon presentation.

TREATMENT

MEDICAL
Broad spectrum intravitreal antibiotic injection

SURGICAL
Vitrectomy

Intravitreal injection

VANCOMYCIN HYROCHLORIDE (1mg-0.1ml)
STEP 1-: 500mg powder-add 10ml of
RL-(50mg/ml)-Topical dose.
STEP 2-: 2ml of the above-add 8ml of
RL-(10mg/ml).
STEP 3-: Take 0.1ml of the above for
injection (1mg in 0.1ml).

CEFTAZIDIME HYDROCHLORIDE
(2.25MG IN 0.1ML)
STEP 1-: 500mg powder-add 10ml of
RL- gives 50mg/ml.
STEP 2-: Take 1ml of the above(50mg)and
add 1ml of RL-gives 22.5mg/ml.

STEP 3-: Take 0.1ml of the above (2.25mg)
for injection.

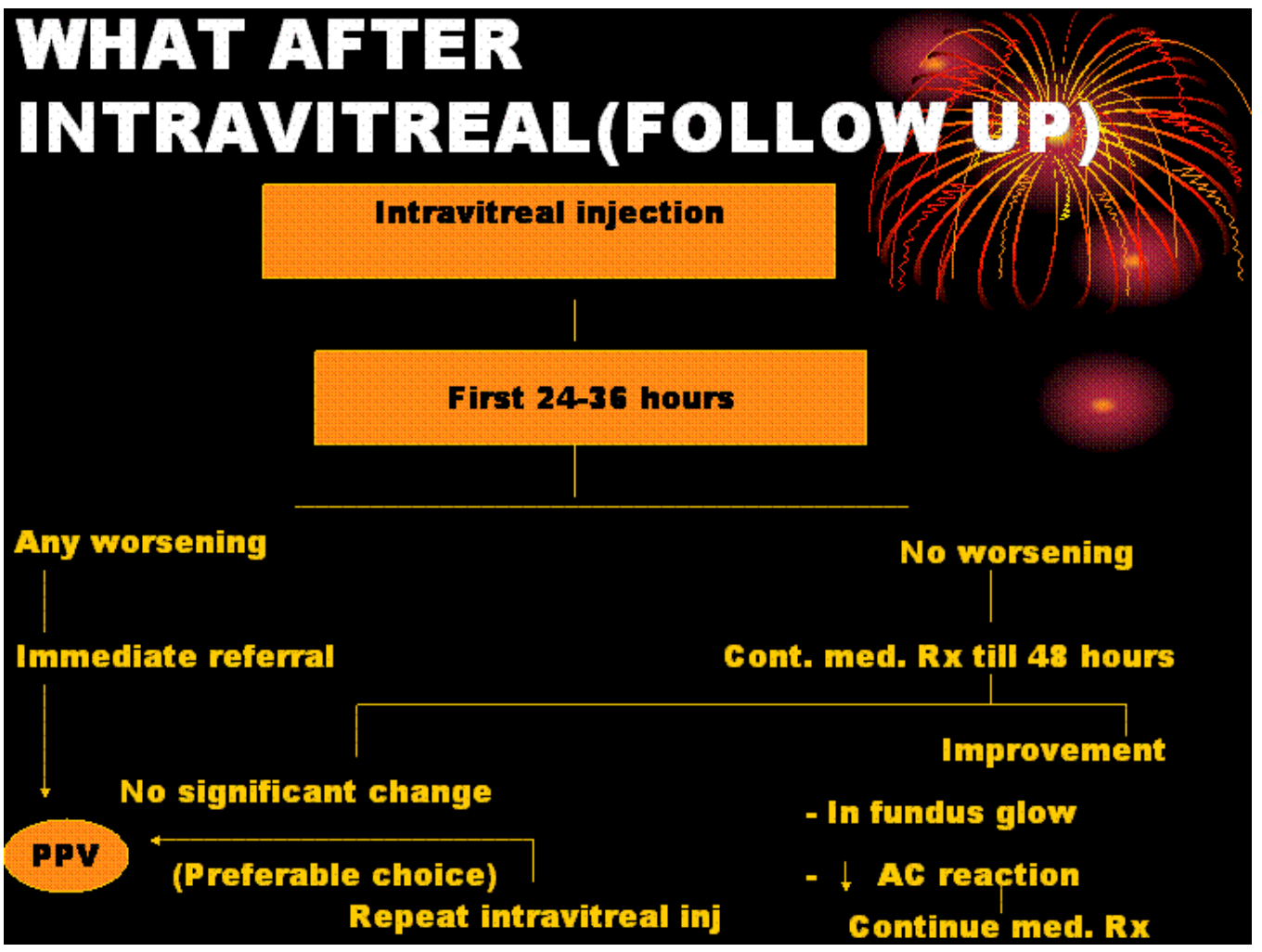
Topical dose-100mg/ml everyhour.

INTRAVITREAL ANTIBIOTICS
Combination of 2 drugs to cover G+ve & G-ve organisms.
Vancomycin(G+) & Amikacin(G-)
Cefazolin(G+)& Gentamicin(G-)

Adjunctive treatment-:
Steroids and topical antibiotics(Flouroquinolones) cycloplegics + anti-glaucoma drugs.
Intravitreal steroids-:
Yes---- 400ug of dexamethasone

Use of S/C MYDRICAINE-
AC reaction.

WHAT AFTER INTRAVITREAL(FOLLOW UP)



SURGICAL TEATMENT-:

VITRECTOMY

INDICATIONS-:
No improvement or actual worsening of the condition clinically after 48 hrs of conservative treatment.
Grade 5, on initial presentation.
Bleb/Trauma associated infection.
RIOFB.
Chronic Endophthalmitis with remission
& excerabation.

ROLE OF VITRECTOMY
Removes a large volume of the infectious & inflammatory load.
The antibiotic concentration within the eye.
Clears the media &reduces the risk of late complications.

ENDOPHTHALMITIS VITRECTOMY STUDY{EVS}
Comparison b/w immediate PPV & tap/biopsy & b/w the use vs. non use of intravenous antibiotics for the treatment of postoperative bacterial Endophthalmitis.

CONCLUSIONS
* If initial visual acuity is HM or better there is no difference b/w immediate pars plana vitrectomy or intravitreal antibiotics.
* If initial visual acutiy is only PL then immediate vitrectomy has three times the chance of achieving 20/40 visual acuity over vitreous tap(33%vs.11%).
* Whether or not systematic antibiotics are used there is no difference in the final visual acuity.

Prognosis:

Depends on the following:
Duration of endophthalmitis
Time to treatment
Virulence of bacteria
Severity of trauma
Existing ocular diseases-
CD/RD/ERM.

PREVENTION

Identify the high risk patients before elective surgery.
*Blepharitis
*Abnormal lacrimal drainage
*Active infection elsewhere
Preparation of operative field.
* 5-10% povidone-iodine solution.
Drapes.
Sterile gloves.
Prophylactic topical and/or periocular antibiotics.
Prophylactic intravitreal antibiotics
in trauma cases.

PATIENT EDUCATION

Direct patients to maintain hygienic practice after surgery.