Allergic diagnosis

Allergy

A state of hypersensitivity as a result of ag-ab reaction vary in degree from:

1) **local swelling (redness, edema and erythema).**
2) **Febrile condition (fever).**
3) **Anaphylactic shock and death (increase the dose or decrease ag purification).**

Types

1) **Mallein test (Glanders).**
2) **Histoplasmin (Epizootic lymphangitis).**
3) **Fasciolin (Fascioliasis).**
4) **Brucellin (Brucellosis).**
5) **Tuberculin (TB).**
6) **Johnin (Johns disease).**

1. Johnin test

Definition: **Allergic field screening test used for diagnosis of Johns diseases.**

Types:

1) **Single intera-dermal JT (more popular).**
2) **Intera-venous JT (more specific).**

1. Single intera-dermal Johnin test

Procedures:

1. **Clipping and shaving the hair of the skin at the middle of the neck – washing by warm water and soap – dry – touch by alcohol 70%.**
2. **Measure skin thickness using Caliper**
3. **Inject 0.2 ml PPD at the target site (I.D needle)**
4. **Wait 1-2 days then take the results.**

1. Single intera-dermal Johnin test

Results:

1. **Edematous swelling, redness and increase skin thickness more than 3 mm (Positive).**
2. **No changes (Negative)**

2. Intera-venous Johnin test

Procedures:

1. **Tested animal should have normal body temperature before and 2 h post testing (to avoid non specific reaction).**
2. **Inject 2-4 ml PPD intera-venous.**
3. **Wait 3-8 hours.**
4. **Take the temperature.**

2. Intera-venous Johnin test

Results:

1. **Increase body temperature (1-1.5 degree) considered Positive.**
2. **No change Negative**

Advantages of johnin:

1. **Field screening and detect 80% of infection.**

Disadvantages of johnin:

1. **Give false +ve with:**

- **Vaccinated animal.**
- **Animal infected with avian or bovine TB**

2. **Give false –ve in peri-clinical and advanced stage of the disease.**

2. Tuberculin test

- **Definition:** **Allergic field screening test used for diagnosis of TB and base of control and eradication program (mainly in cattle and buffaloes).**
- **Types:**

1. **Single intera-dermal T. T (SITT).**
2. **Single intera-dermal comparative T. T (SICTT).**
3. **Short thermal T.T (STTT)**
4. **Intera-venous T.T**
5. **Stormant test**

1. Single intera-dermal TT

Indication:

1. **Herd of unknown status.**
2. **Introduction of new animals to the herd**
3. **Suspected reactors**

1. Single intera-dermal TT

- **Procedures**

1. **Preparing the site of injection (Clip, shave, wash, dry and touch with alcohol 70%) then measure the skin thickness.**
2. **The sites of injections are:**

- **Cervical part of the neck**
- **Tail fold.**
- **Valvular lips at muco-cutanous junction**

1. Single intera-dermal TT

3. **Using tuberculin needle inject 0.1 ml PPD (free herd or herd of unknown status) or 0.2 ml (known infected herd).**
4. **Wait 2-3 days then measure the skin thickness.**

Results

1. **Increase thickness 1-2 mm (-ve).**
2. **Increase thickness 3-4 mm (doubtful retest 2 m).**
3. **Increase thickness more 4 mm (+ve eradication).**

1. Single intera-dermal TT

Advantages:

1. **Initial field screening test for herd of unknown status, newly introduced animals and in case of suspected reactors.**
2. **Detect 90 % of infected animals.**
3. **Can be applied on calves more than 6 m.**

1. Single intera-dermal TT

Disadvantages: (lack of specificity due to presence of false -ve and false +ve results)

1. **False -ve results in case of minimum sensitized animals due to insufficient ab:**

- **Early and late stage of the disease.**
- **Old or senile animal.**
- **Recent parturient cow due to decending of ab in the colostrum (dam false -ve & calf false +ve).**

1. Single intera-dermal TT

2. **False +ve results in case of :**

- **Newly borne calf from infected recent parturient cow.**
- **Vaccinated animal.**
- **Animal sensitized to non pathogenic mycobacterium as (Avian & skin TB and M paratuberculosis)**

2. Single intera-dermal CTT

Indication:

- **Test used to differentiate between infection due to pathogenic or mammalian and non pathogenic or avian mycobacterium (avian, paratuberulosis).**

2. Single intera-dermal CTT

- **Procedures**

1. **Preparing the site of injection (Clip, shave, wash, dry and touch with alcohol 70%).**
2. **Inject 0.1 ml PPD of both mailman and avian stain of T. B in middle aspect of one side of the neck & 2 different sites and 12 cm apart.**
3. **Wait 2-3 days then observe the results.**

2. Single intera-dermal CTT

- **Results**

1. **Increase skin thickness in mammalian site than avian site by 3 mm (+ve pathogenic).**
2. **Increase skin thickness in avian site than mammalian site by 3 mm (+ve non- pathogenic).**

- **Advantages: detect animals that sensitized to non-pathogenic strains that give false +ve SIT.**

3. Short thermal TT

- **Procedures:**

1. **Tested animal should have normal body temperature before and 2 h post testing (to avoid non specific reaction).**
2. **Inject 4 ml PPD s/c in middle aspect of neck.**
3. **Wait 3-8 hours.**
4. **Take the temperature.**

3. Short thermal TT

- **Results:**

1. **Increase body temperature (1-1.5 degree) considered Positive.**
2. **No change Negative**

- **Advantage**

1. **Detect minimal sensitized animals that give false –ve with SIDTT**

- **Dis advantage**

1. **Anaphylactic shock due to large dose of PPD**

4. Intra-venous TT

1. **The same of short thermal but the rout of injection is I/V.**

5. Stormant test

- **Procedures**

1. **Preparing the site of injection (Clip, shave, wash, dry and touch with alcohol 70%) then measure the skin thickness.**
2. **Inject 0.1 ml PPD I/D in middle part of cervical region and repeat after 7 days in the same site.**
3. **Wait 24 h from the 2nd injection and take the result**

5. Stormant test

- **Results**

increase of thickness more than 4mm (+ve result)

- **Advantages**

1. **More accurate and more sensitive than SID due to attraction of more ab.**
2. **Highly effective in detection of minimal sensitized animals that give false –ve with SIDTT**

5. Stormant test

- **Disadvantages**

1. **Time consuming (8-9 days).**
2. **Needs 3 animal visit**
3. **Require specific PPD with specific potancy**

NB

- **Herd of unknown status & suspected reactors (SID, SIDC and Stormant test)**
- **Free herd (SID and retest 2 m later)**
- **Herd in advanced stage (Short themal and Stormant).**
- **Herd with non-pathogenic strain (Stormant and SIDC)**
- **Recent parturient cow (Stormant)**