CONCLUSION
CONCLUSION

In the present study, confirmation and comparison of potency of tromaril with other non-steroidal anti-inflammatory agents like aspirin, indomethacin, brufen and tolmelin was done in experimental models and between aspirin and tromaril in patients of different types of arthritis. To assess the safety of tromaril over other anti-inflammatory agents. Toxicity studies were done and incidence of side effects were also recorded.

Following conclusions can be drawn from the observations:

EXPERIMENTAL STUDIES:

1. Our study revealed that tromaril is a weak analgesic (ED$_{50}$ = 1.41 ± 0.3 mg/kg) as compared to the other anti-inflammatory agents. The relative analgesic potency was found to be in the order – Indomethacin > brufen > aspirin > tolmelin > tromaril. Indomethacin appears to be comparatively most potent but the safety margin is higher with tromaril as evidenced by LD$_{50}$ value being (7 2000 mg/kg) and therapeutic index (14.15).

2. In the present investigation, all the drugs were found to possess significant anti-pyretic activity in T.A.B. vaccine – induced pyrexia. However, tromaril appears to be equipotent to aspirin in this test.

3. Our experiments showed that tromaril is the least potent anti-inflammatory agent as evidenced by the
relative potency of the non-steroidal anti-
flammatory agents in descending order - indomethacin
7 brufen 7 tolfenit 7 aspirin 7 tromaril and is
further supported by value of anti-inflammatory ED50
highest for tromaril (132 mg/kg) and lowest for
indomethacin (5 gm/kg). However, tromaril is compar-
atively safer than the other anti-inflammatory
agents as is evidenced by LD50 value 7 2000 mg/kg.

4. Our study suggests that tolfenit, aspirin, indometh-
acin, brufen and tromaril possess ulcerogenic activity
at a higher dose. However, tromaril proved to be
comparatively less ulcerogenic than the other anti-
flammatory agents. Aspirin, indomethacin and
tolfenit were found to markedly increase the incidence
of ulcers following pyloric ligation or stress.
Comparatively tromaril and brufen slightly proved
to be safer as they increase incidence of ulcers
in the above test, slightly.

5. Aspirin and brufen were found to induce hyperglycemia
while tolfenit and indomethacin produced hypoglyce-
mia. However, tromaril did not effect the carbohydrate
metabolism in the usual doses while in higher
doses it induced hypoglycaemia. Therefore, it can
be safely inferred that tromaril does not possess
any intrinsic effect on carbohydrate metabolism.

6. In our study, aspirin, brufen, tolfenit and tromaril
affected the uric acid metabolism as they produced
hypouricaemia, aspirin and tolvmetin were most potent while tromaril and brufen were less potent. Indomethacin was devoid of any effect on the serum uric acid level. Tromaril exhibited a weaker hypouricaemic activity as compared to aspirin and tolvmetin.

7. We observed thrombocytopenic reponse with indomethacin, tolvmetin, aspirin and brufen. While tromaril did not affect platelet count. Comparatively indomethacin was the most potent in inducing thrombocytopenia.

8. Clotting time was decreased by aspirin, indomethacin, brufen and tolvmetin. However, tromaril did not show any change in the coagulation time. On the basis of this observation, it may be concluded that tromaril can safely be used in blood coagulation disorders.

9. Our study shows significant increase in plasma fibrinogen content and E.L.T. with aspirin, tolvmetin and indomethacin while brufen showed increased plasma fibrinogen content and decreased E.L.T. However, tromaril showed insignificant decrease in plasma fibrinogen content and euglobulin clot lysis time. Tromaril, therefore, appears to possess fibrinolytic activity but needs further study for confirmation.

10. In the toxicity studies, tromaril proved to be the safest drug with LD$_{50}$ value of more than 2000 mg/kg suggesting a wider margin of safety as compared to
the other anti-inflammatory agents. Relative safety of the anti-inflammatory agents was calculated in the descending order - brufen 7 aspirin 7 tromaril 7 tolmetin 7 indomethacin.

**Clinical Study:**

1. In the present study, aspirin produced slightly more significant improvement in grip strength than tromaril, indicating its superiority over the other drug.

2. Our study suggests that tromaril and aspirin are equieffective in improving walking time, signifying beneficial effect.

3. The present study revealed that both aspirin and tromaril significantly decreased the digital joint circumference (P.I.P.).

4. We observed that aspirin markedly decreased the duration of morning stiffness as compared to tromaril.

5. In the present investigation, both the drugs afforded significant relief from subjective pain. However, aspirin was found to be more effective than tromaril.

6. Aspirin caused significant reduction in E.S.R. as compared to tromaril.

7. Both tromaril and aspirin treated patients showed anti-pyretic activity. So tromaril with its reasonable anti-pyretic action could be of advantage in
rheumatic fever and rheumatoid arthritis.

8. Aspirin treated patients showed higher incidence of side effects as compared to tromaril. It indicates better tolerance of tromaril over aspirin.

9. It may be concluded that tromaril is a safer, reasonably potent and effective anti-arthritic agent. It suppresses the process of inflammation, diminishes the severity of pain, brings down elevated body temperature improves the joint function in the patients of rheumatoid arthritis.