Summary and Conclusion

The present work was carried out on isolated segments of different parts of the small intestine in rabbits. These segments include the duodenum jujunum and ileum.The solution used for all preparations in this study is Krebs-Henseleit buffer solution and the pH of the solution is adjusted at 7.4.

- The present study was designed to demonstrate the effect of the following conditions on the motility of different parts of the small intestine, which include the following experiments:

- Group I :the aim was to study the effect of decreased production of NO (by L-name) on the basal motility of small intestine.
- Group Π : the aim was to study the effect of decreased production of NO (by L-name) on motility of small intestine after addition of acetylcholine
- Group ΙΙΙ : the aim was to study the effect of decreased production of NO (by L-name) on motility of small intestine after addition of adrenaline.
- Group IV: the aim was to study the effect of increased production of NO (by NO precursor L-arginine) on the basal motility of small intestine.
- Group V: the aim is to study the effect of increased production of NO (by NO precursor L-arginine) on motility of small intestine after addition of acetylcholine.
- Group V I : the aim was to study the effect of increased production of NO (by NO precursor L-arginine) on motility of small intestine after addition of adrenaline.

Data included in this study were amplitude and tone of muscle contractions of different parts of small intestine (duodenum,jejunum and

ileum).The obtained results of this study could be summarized into the following main point

In group I **:**

L-name causes significant decrease in the amplitude of (duodenum,jejunum and ileum) contractions and significant increase in tone of (duodenum,jejunum and ileum) segments.

In group II:

1) Acetylcholine causes significant decrease in the amplitude of the (duodenum,jejunum and ileum) contractions but it increases significantly the tone of the small intestine (duodenum,jejunum and ileum) segments.

L-Name after adding Ach causes:

- Significant decrease in the amplitude of the small intestinal (duodenum,jejunum and ileum) contractions

-Significant increase in the tone of the small intestinal (duodenum,jejunum and ileum) contractions.

In group III :

2) Adrenaline causes significant decrease in the amplitude of the small intestinal (duodenum,jejunum and ileum)contractions but it also causes significant decreases the tone of the small intestinal (duodenum, jejunum and ileum)segments

Addition of L-Name after adding adrenaline causes significant decrease in the amplitude of the small intestinal (duodenum,jejunum and ileum)contractions and also causes significant increase in the tone of the small intestinal (duodenum,jejunum and ileum) segments.

In group IV :

L-arginine causes: significant increase in the amplitude of the small intestinal (duodenum,jejunum and ileum) segments contractions and significant decrease in tone of the small intestinal (duodenum, jejunum and ileum) segments .

In group V :

L.arginine after adding Ach causes significant increase in the amplitude of the small intestinal (duodenum, jejunum and ileum) segments contractions and significant decrease in the tone of the small intestinal (duodenum, jejunum and ileum) segments .

In group VI :

L-arginine after adding adrenaline causes:

significant increase in the amplitude of the small intestinal (duodenum, jejunum and ileum) segments contractions and significant decrease in the tone of the small intestinal (duodenum, jejunum and ileum) segments contractions.

From above results we concluded that:

1)Basal NO has inhibitory effect on the tone of all segments of small intestine in rabbits .But it has a stimulatory effect on the amplitude of contractions all segments of small intestine in rabbits.

2) Basal NO is responsible for about 21% of the basal amplitude of contractions in the duodenum , about 34% of the basal amplitude of contractions in the jejunum and about 31% of the basal amplitude of contractions in the ileum.

3)Decrease the basal production of NO by L-name has stimulatory effect on the tone of all segments of small intestine and inhibitory effect on the amplitude of contractions of all segments of small intestine.

4)Inhibition of the production of NO potentiates the effect of ACH on the amplitude and tone of muscle contraction of small intestine.

5) Inhibition of the production of NO antagonizes the the effect of adrenaline on the amplitude and tone of muscle contraction of small intestine.

6)Increased production of NO (by L-arginine) has inhibitory effect on the tone and stimulatory effect on amplitude of contraction of small intestine.

7) Increased production of NO (by L-arginine) antagonize ACH effect on the amplitude and tone of muscle contraction of small intestine.

8) Increased production of NO (by L-arginine) antagonize adrenaline effect on the amplitude of muscle contraction of small intestine.

9) There is no segmental difference in small intestine (duodenum, jejunum and ileum) as regard effects of NO on small intestinal motility.

RECOMMENDATION

1)More investigations about the effect of increased or decreased production of NO on intestinal motility .

2) More investigations about the effect of increased or decreased production of NO on other effects on intestine such as intestinal secretion

3)) More investigations about the effect of increased or decreased production of NO on other organs as NO has multiple systemic effects.

4)Investigation are preferred to be done on knock out animals (deficient in production in specific NOS enzymes) as there is three types of NOS enzymes each of them has a specific function in the body.

5) More investigations about the effect of increased or decreased production of NO on intestinal motility which is done by drugs(as sildenafil and nitroglycerine) which affect NO production to reveal the effect of these drugs on intestinal motility.

6) A number of inhibitors potentially selective for the NOS isoforms have been developed, but no known inhibitor is completely selective for one isoenzyme. Moreover, these compounds may have additional pharmacological effects unrelated to the NO pathway so knock out animals (deficient in production in specific NOS enzymes) are preferred.