

APRIL					MAY							
S	M	T	W	F	S	S	M	T	W	T	F	S
30	1	2	3	4	5	1	2	3	4	5	6	
2	3	4	5	6	7	7	8	9	10	11	12	13
9	10	11	12	13	14	14	15	16	17	18	19	20
16	17	18	19	20	21	21	22	23	24	25	26	27
23	24	25	26	27	28	28	29	30	31			

Week 13 (091-274)

2017

Saturday
April

01

Renin - Angiotensin - Aldosteron (RAA) System.

8

It is a hormonal mechanism that regulates homeostasis of two most important bodily ions - Na^+ and K^+ that adjust blood pressure and blood volume. It also helps to excrete H^+ in the urine and remove acids from the body to prevent acidosis.

12

Pathway :

- Dehydration, Na^+ deficiency and hemorrhage initiate the pathway by decreasing blood volume.
- A decrease in blood volume leads to decreased blood pressure level which stimulates the kidney's JG cells to secrete renin.
- With increased renin levels in the blood, a plasma protein that produced in the liver, called angiotensinogen converts into angiotensin I.
- Increased levels of angiotensin I containing blood when reaches to the lungs, the enzyme - angiotensin converting enzyme (ACE) converts angiotensin I into the hormone angiotensin II.
- Increased blood level of angiotensin II stimulates the adrenal cortex to secrete aldosterone.

Notes

Appointments

Phone

2017

Week 14 (093-272)

03

Monday
April

MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
5	6	7	8	9	10	11	30	2	3	4	5	6	7
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29

→ When blood containing increased aldosterone circulates through the kidneys, it increases the reabsorption of Na^+ which in turn causes reabsorption of water by osmosis.

↑

↑ Aldosterone also stimulates the kidneys to increase secretion of K^+ and H^+ into the urine.

↓

↑ These actions increased water reabsorption thus increases blood volume, which in turn increased the blood pressure to normal.

↑

→ Angiotensin II also stimulates the contraction of smooth muscle in the wall of all arterioles. The vasoconstriction increases blood pressure and thus helps to raise the to normal.

Notes

Appointments

Phone

MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6			1	2	3			
7	8	9	10	11	12	13	4	5	6	7	8	9	10
14	15	16	17	18	19	20	11	12	13	14	15	16	17
21	22	23	24	25	26	27	18	19	20	21	22	23	24
28	29	30	31				25	26	27	28	29	30	

Week 14 (094-271)

2017

Tuesday
April

04

8 Decreased blood pressure
↓

9 Juxtaglomerular cells of kidney secrete renin
↓

10 Liver → Angiotensinogen → Increased Angiotensin I
11

12 Increased Angiotensin II
1
↓
13 Angiotensin converting enzyme in the lungs
14 Vasoconstriction of arterioles
15 ↓

16 Adrenal cortex ← Increased K⁺ in ECF
17 ↓

18 Blood pressure increased to normal.
↑

19 Increased Aldosterone
20 ↓

21 Increase Na⁺ and water reabsorption and increased secretion of K⁺ and H⁺ into urine.
22 → Increase blood volume

23 Fig: Regulation of RAA pathway.

Notes

Appointments

Phone