

## NEWS

# Hepcidin and anemia in hemodialysis

Improvement in anemia management during the predialysis phase has been suggested to exert beneficial effect in reducing the cardiovascular disease (CVD) risk after initiating hemodialysis. Therefore, one has to understand several molecular mechanisms involved in anemia before attempting to correct it.<sup>[1]</sup> Hepcidin (hepatic bactericidal protein) is a cysteine-rich protein. It was initially identified as a urinary antimicrobial peptide. Later, it was found to have important regulatory role in iron homeostasis. Increased iron level in the plasma and iron storage stimulates the production of hepcidin. Hepcidin in turn blocks iron absorption from the diet in the gut and further iron storage in the form of ferritin.<sup>[2]</sup> It achieves these functions through interaction with ferroportin.<sup>[3]</sup> Iron deficient state stimulates erythropoiesis. Macrophages exhibit strong upregulation of ferroportin expression in iron deficiency in response to increased erythropoiesis. However, hepcidin is also elevated during inflammation and/or infection.<sup>[4]</sup>

As hepcidin blocks cellular iron release, in inflammatory conditions, it can promote cellular iron accumulation. Increased iron accumulation in arterial wall macrophages is observed in atherosclerotic lesions. It has been suggested that anemia management during a transition

period to hemodialysis could influence its prognosis. Previous studies have investigated the relation of hepcidin-25 and atherosclerosis in a group of hemodialysis patients.<sup>[1,4]</sup> Predialysis blood samples were collected to estimate hepcidin 25. Ultrasonographical B-mode imaging of the bilateral carotid arteries was performed to assess carotid intima-media thickness (CIMT) as a measure of atherosclerosis. They found that age and hepcidin-25 level are the major contributing factors of CIMT in hemodialysis patients. This finding reveals the putative role of hepcidin in pathophysiology of atherosclerosis and CVD in hemodialysis patients.

## REFERENCES

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# Quality of sleep and its health consequences

Sleep is essential for the normal functioning of the body. Sleep restores both the physical and mental strength. Adequate sleep improves the ability of an individual to think and concentrate. In the present day-to-day life, the quality of sleep is significantly disturbed due to various reasons. Altered sleep is unavoidable among night shift workers, pregnant women, those preparing for examinations, etc. Previous studies have reported a positive correlation between the duration of sleep and metabolic syndrome.<sup>[1]</sup> A previous study by Gozashti *et al.* has shown that adequate sleep provides a better glycemic control in diabetes mellitus patients.<sup>[2]</sup> Inappropriate time to bed not only affects the physical health of an individual, but it is also known to affect the mental health of an individual. Some reports reveal that disturbed sleep is associated with cognitive deficits and behavioral

disorders.<sup>[3]</sup> Individuals with sleep disturbances have increased incidence of psychological disorders.<sup>[4]</sup> Hence, altered quality of sleep and sleep disturbances should be considered as an important risk factor in all diseased individuals, and appropriate treatment has to be given.

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## VIEWS

### Teenager smartphone use and weight gain

The prevalence of overweight and obesity in childhood and adolescence is quite high. This unhealthy adiposity at this young age is prone to carry on into adulthood. Excessive body fat is associated with physical as well as psychosocial comorbidities. It has also been linked to lower cognitive level and low performance at school and work sector. Nowadays, teenagers are found glued to various modern gadgets such as smartphones, tablets, and video games. Various research works have now found a link between the duration of smartphone use and incidence of obesity among teens. The connecting link is found to be increased consumption of unhealthy junk food among smartphone users. Most users with  $\geq 5$  h

daily were twice as likely to drink more sugary beverages and engage in too little physical activity. Therefore, the lifestyle changes suggested must include monitoring the usage of smartphone, tablets, video game, computer, etc., apart from inclusion of reduced caloric intake and increased physical activity, for prevention and treatment of childhood and adolescent obesity.

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