

Thalassemia; Chronic ESR Caused by Entamoeba Histolytica/ Giardia Lambia Leads to Imbalance in α - β Globin Chains Synthesis and Aplastic Anemia

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Thalassemia is a blood disorder of α - β globin chain synthesis of HbA, simultaneously children affected by thalassemia are also infected by Entamoeba histolytica / Giardia Lambia and this infection is from G I tract to bone marrow that causes high chronic ESR.

Infection of Protozoa (*Entamoeba histolytica* / *Giardia Lambia*) causes production of inflammatory mediators that leads to increased chronic ESR, high ESR in infants and children affects every part of body including the site of origin of RBCs i.e RBC precursors, inflammation of RBC precursors causes expanding of mass of red cells precursors that erodes the cortex that impairs bone growth and finally ineffective erythropoiesis, chronic high ESR reflects severity of inflammation that diminished survival of RBC precursors.

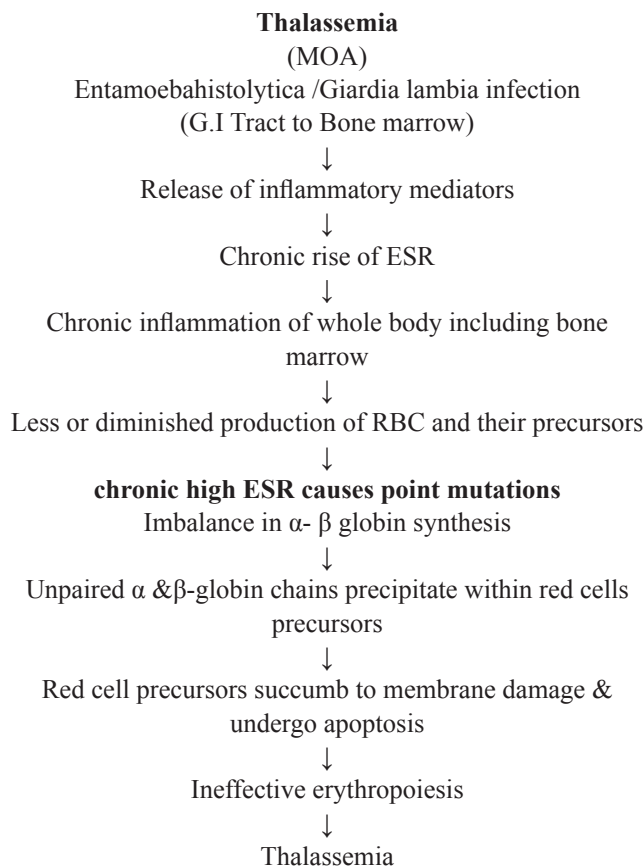
Chronic high ESR affects RBC precursors in terms of causative mutation mostly consisting of point mutations, the mutations reduce transcription proportionally, high ESR prevents production of normal β - globin mRNA and α - globin mRNA resulting in β^0 - β^+ thalassemia and α -thalassemia respectively.

It is seen in retrospective study that all thalassemic patients are suffering from *Entamoeba histolytica* / *Giardia Lambia* with high chronic ESR, Stool examination and ESR testing confirms that all Thalassemic patients carry cysts of *Entamoeba histolytica* / *Giardia Lambia* with high ESR (before blood transfusion), proper and careful treatment of *Entamoeba histolytica* / *Giardia Lambia* with Metronidazole/ Tinidazole + Diloxinidefurate \pm quinolone leads to reduction of ESR, reduction of ESR leads to effective erythropoiesis results in improvement of HbA.

It is unfortunate that most of pathologies give negative report of *Entamoeba histolytica* / *Giardia Lambia* in stool examination hence selection of pathology plays a crucial role in accurate diagnosis and confirmation.

CONCLUSION

Treatment of *Entamoeba histolytica* / *Giardia Lambia* in thalassemia with Metronidazole/Tinidazole + Diloxinidefurate \pm quinolone leads to improvement of effective erythropoiesis.



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Treatment of Thalassemia

(MOA)

Entamoebahistolytica /Giardia lambia infection
[GI Tract to Bone marrow]**Treatment** ↓↔ **Metronidazole/tinidazole**
+Diloxinidefurate ± quinolone

Reduction of inflammatory mediators



Reduction of chronic ESR

Reduction of inflammation of bone marrow(red cell
precursors)

Effective erythropoiesis

Note: Intravenous therapy is more effective in reducing
chronic ESR as compare to orals.

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