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Opinion
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Antimalarials Validate the Germ Terrain Duality Theory

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Opinion

The Germ-Terrain duality theory of disease states that the etiology of certain diseases/diseased states is better explained as a complex interplay between germs and the inherent anatomical/physiological integrity of the body cell [1,2].

It argues that the etiology of certain diseases is not fully explained merely by the presence of germs (Germ Theory) or by a mere loss of cellular integrity (Terrain Theory) [1,2]. As a result the prevention and treatment of such diseases should focus not just on fighting germs but on maintaining/restoring the anatomical/physiological cellular integrity. The Germ-Terrain duality theory is a harmonization of the current Germ Theory (popularized by Loius Pasteur) and the hitherto discarded Terrain Theory (popularized by Pierre Bechamp).

The terrain theory is the theory of disease proposed by Antoine Béchamp that a diseased body, the «terrain», will attract germs to come as scavengers of the weakened or poorly defended tissue. Béchamp postulated that the pH of the body is important, and that an acidic pH will attract germs and an alkaline pH will repel them.

PH is a measure of acidity or alkalinity. A Ph >7 is alkaline, ph <7 is acidic. A ph of 7 is neutral. Normal Ph of blood is 7.35-7.45. During malaria blood ph becomes lower. Malaria causes blood ph to drop causing acidosis. Metabolic acidosis is a common complication of severe malaria caused by Plasmodium falciparum [3].

Cell/tissue damage and death reduces PH, attracting plasmodium (if already present), whose vesicles are acidic. Cell damage and death is associated with reduced ph [4].

The antimalarial chloroquine attacks/destroys plasmodium by increasing the ph of the vesicles in plasmodium falciparum [5-7]. Just Reducing ph of blood to 5.5 (in vitreo, and for monkeys) kills plasmodium, even without utilizing antimalarials [8] (Table 1) [9-17]!

Table 1:

Antimalarial Drug	Acidic or Alkaline	Encouraged Alkalinity (Yes or No)
Quinine	Alkaline, ph of saturated aqueous solution =8.8 [9]	Yes
Warburg's Tincture	alkaline	Yes
Methylene Blue	Alkaline with ph of 10.6 [10]	Yes
Chloroquine	Alkaline with pka of 10.1 [11,12]	Yes
Amodiaquine	Alkaline [13]	Yes
Pyrimethamine	Alkaline [14,15]	Yes
Proguanil(chloroguanide)		
Sulfonamides	partly derived from weak alkaline	Yes
Mefloquine	ph is 7.4 (physiological Ph) [16]	Yes
Atovaquone	Alkaline	Yes
Primaquine		Yes
Artemisinin	originally derived from alkaline herbs	Yes
Halofantrine	10.5 pka [17]	Yes
Doxycycline		Yes
Clindamycin	Neutral, ph=7	Yes

Virtually all the drugs used to treat malaria through the ages were either alkaline or encouraged alkalinity of the blood/body cells or of the parasites within the cells viz.

Conclusion

As defined in the Germ Terrain Duality Theory, the PH of blood is important. Antimalarials through the ages have waged a PH war.

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