

## Hydrogen Peroxide: Possible Cause of Amyotrophic Lateral Sclerosis (ALS)

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ALS; Motor Neurons; Sensory Neurons; Acetylcholine; Glutamate; Hydrogen Peroxide

### 1. Abstract

This paper is about the possible cause for some types of ALS. The culprit once again is hydrogen peroxide. The chemical equations for the neurotransmitters involved yield an imbalance toward Ach which can be inhibitory. It is the inhibitory signal that stalls muscles causing ALS.

### 2. Introduction

ALS affect only the motor neurons; not the sensory. This includes the motor area in the Frontal Lobe and the Descending tracks in the Spine. The Cranial Nerves 3-12 pairs are affected. So are the 31 pairs of spinal nerves. The characteristic of the disease is the onset of muscular control degeneration. Typically, patients live for 3-5 years after first sign of the disease.

Some features of the disease include that the eye lids do not close during sleep (CN 7.) And there are outbursts of laughing or crying (Intense emotion associated with the limbic system.) ALS patients have trouble with balance which implies a problem with CN8. Also, the senses (sight, hearing, touch, taste, and smell) are unaffected by ALS. There appears to be a genetic component in 10% of ALS cases. Patients with ALS complain of sweating (CN 7) and loss of balance (CN8). Chewing is a problem with ALS (CN 5). CN's 5,7,8 are located in the Medulla and the Pons. ALS affects CN3,4,5,6,7,8,11,12 located in the Midbrain; Pons; Medulla (with the exception of CN 9 & 10) This could be directly related to a lesion in the spinothalamic tract and the proprioception pathway respectively.

If we take the Sensory and Motor nerves to be  $1+1=2$ , and subtract  $CN9 = \text{Taste}$  and  $CN 10 = \text{Taste}$ ; and we know  $\text{taste } i = \sqrt{G} = \sqrt{368}$

$$2 - (2(0.816)) = 368 = 1/e^{-1} = e^{-(-1)}$$

We know from previous papers by this author in neurology that the senses have a resistance (or capacitance) or equal to 1.

$$V = iR$$

$$105.8 = i(1)$$

$$i = 105.8$$

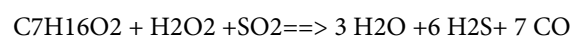
$$i = t^2$$

$$t = \sqrt{i} = \sqrt{105.8} = 102.859$$

I hypothesize that the problem lies with neurotransmitters since all the muscles, visceral (smooth) muscles and somatic. The upper motor area in the cortex is affected by ALS and so are the lower motor neurons (brain stem).

After considering various neurotransmitters, I conclude that Acetylcholine, which is excitatory and inhibitive, along with Glutamic Acid, which is excitatory are involved.

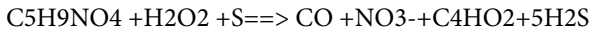
The chemical equations might look like this:



Ach. + **Hydrogen Peroxide (toxin)** + Oxygen  $\implies$  Water + Hydrogen+ Nerve Ion.

$$(386.654) + (34) + (32+32.066) = 484.72g/mol \times 6.023 = 2919.g$$

Add:



Glutamate + Toxin  $\Rightarrow$  Pr- Neurotr. + Pr- NeuroTr. + Flavouring + Pr- NeuroTr.

$$(147.3) + (34) + (32) + (32.066) = 245.366 \text{ g/mol} \times 6.026 = 1477.8 \text{ gm}$$

$$386.654 + 34 + 34 + 32 + 147.3 + 32 + 32 = 6979 \sim 0.698 \sim 7000$$

$$M = \ln t$$

$$\ln 0.698 = 358$$

$$698 = [\text{Motor} + \text{Senses}] / t$$

$$698 = [\text{Motor} + 1] / 358$$

$$25 = \text{Motor} + 1$$

$$L = \ln t + c^3$$

$$2 = \ln t + 27$$

$$\ln t = 125 = M$$

$$M = \text{Motor} + 1$$

$$M = 1 + 1 = 2 = dM/dt$$

$$M = \ln t$$

Derivative:

$$dM/dt = 1/t$$

$$2 = 1/t$$

$$t = (1/2) = E_{\text{min}}$$

$$GMP \ t^2 - t - 1 = E$$

$$(1/2) - (1/2) - 1 = -.125$$

$$M = \ln t$$

$$(386.654) = \ln t$$

$$t = 147.16$$

$$E = 215.07$$

$$M = \ln t$$

$$147.3 = \ln t$$

$$t = 936.6$$

$$E = 105.9 \sim V+$$

$$\Delta E = E_{\text{Ach}} - E_{\text{Gut}} = 10917$$

= Net Inhibitory

Ach. stimulates receptors at the neuromuscular junction of the skeletal muscles.



CHOLESTEROL + CEREBROSIDE + OXYGEN + ACETYLCHOLINE  $\rightarrow$  CARBONMONOXIDE + SULPHATE + HYDROGEN PEROXIDE.

amu

$$C_{27}H_{46}O \quad 386.654$$

$$SO_4 \quad 96.06$$

$$O_2 \quad 32.00$$

$$\Sigma 514.714 \times 6.023 \text{ (Avogadro)} = 31.00 \quad \text{12th prime Number}$$

The Upper Motor Neurons and Lower Motor Neurons cross over in the corticospinal pathway. There are 12 CN pairs and 31 SN pairs.

$$(1/12) + (1/31) = 43/372 = 115.59 = E$$

And,

$$(31/12)^2 = 6.67 = G$$

$$115.6 \times \sqrt{3} = 2.002 \text{ (Motor and Sensory)}$$

$$115.6 / \sqrt{3} = 6.67 = G$$

$$6.67/7 = 105 = V+$$

$$s = t$$

$$s = |E| |t| \sin 60 \text{ deg.}$$

$$E = 1/\sin 60$$

$$115.56 / \sqrt{3} = 6.67 = G$$

### 3. Conclusion

ALS could be caused by an imbalance of the neurotransmitter's acetylcholine and glutamate brought on by the toxin Hydrogen Peroxide.

### References

1. Goldberg S. Clinical Neuroanatomy made ridiculously simple Interactive Edition. 5th edition. MedMaster USA 2019.