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## Relationship between body surface area and encephalization quotient in Chemotherapy of Brain Cancers: The functions of four modified formulas

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Treatment for ssBrain cancer is a difficult task, because of complex nature of physico-chemical properties of brain, central nervous system (CNS) acting drugs and drug carriers. Recently, Saganuwan derived a unique body surface area (BSA) formula for calculation of doses of anticancer drugs for dog and human, which correlates very well with their encephalization quotient (EQ). Therefore von Bronin's and Jerison's formulas were modified to BSA formulas. The four formulas used are for Saganuwan ( $EQ = E / 0.14 \times BW^{0.528}$ ;  $BSA = BW^{0.528} \times H^{0.528} \times 0.14$ ), Jerison ( $EQ = E / 0.12 \times BW^{0.67}$ ;  $BSA = BW^{0.67} \times H^{0.67} \times 0.12$ ), von Bronin ( $EQ = E / 0.18 \times BW^{0.66}$ ;  $BSA = BW^{0.66} \times H^{0.66} \times 0.18$ ) and the resultant formula derived from the above formulas ( $EQ = BW \times \beta \times H^\beta \times K / BSA$ ), respectively. But brain mass is ( $E = kp\beta$ ), whereas p (body weight), k (constant) and  $\beta$  (exponent) are integral part of EQ formulas. The findings revealed that Saganuwan's

formula yielded low effective therapeutic doses of anticancer drugs for brain cancers in dogs and humans and high values of EQs. However, Jerison's and von Bronin's formulas yielded high BSA and low EQ values, respectively. Therefore high EQ denotes low dose of anticancer for brain cancer. Hence EQ and BSA can be used to determine safe therapeutic doses for brain cancers.

### Speaker Biography

Saganuwan Alhaji Saganuwan is an Associate Professor of Pharmacology holds DVM, PGD, PGDE, MSc and PhD in Pharmacology. He has been lecturing at University of Agriculture Makurdi since 2005 with 70 publications in the journals of high repute. His areas of research interest are pharmacology, toxicology, oncology and medicinal chemistry. He was head of department for over 2 years. He is on editorial board of about 10 journals and reviews for about 15 journals of high repute. He has presented conference papers in the USA, UK, Australia, Japan, China, India, Italy, Spain, Cyprus among others.

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