

Bio-Heat Distribution In Reference To Spherical Tumour using Fisher-Kolmogoroff equation

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ABSTRACT

Bio-heat distribution in reference to spherical tumour has been studied. Three layers: Epidermis, dermis and sub dermal are considered to characterize thermal effects. The spherical tumour with rise of temperature in its location makes the vasodilatation active. This abnormality is observed due to the increase of blood flow in the surrounding arteries. This causes the increase of metabolic heat production in the vicinity of the tumour. Temperature difference around 0.4° C makes the elevation in metabolic heat rate in the vicinity of the necrotic core of the tumour. Bio-heat equation in spherical polar form is solved using series solution method. Numerical results are compared with experimental findings to explain the effect of increase in the metabolic heat rate in reference to necrotic core. This shows the abnormality of linear distribution among three layers epidermis, dermis and sub dermal (close to the necrotic core of the tumour)

Key wards: *asymptotic approximation, bio heat, metabolic heat, spherical tumuor.*