



Estimation of Brain Tumor Using Latest Technology of Mobile Phone

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ABSTRACT

There is progressing communication whether the cellular phone radiation creates any health impacts. The impact of cellular phones radiation on human health is the subject of current awareness and as a consequence of the tremendous increment in telephone utilization all through the world. Cell phones use electromagnetic radiation in the microwave range. Other computerized isolated frameworks, for example, information correspondence systems, produce comparable radiation. For the most part the issue of wireless utilization for 50 minutes, cerebrum tissues on the same side of the head as the mobile phones radio wire metabolized more glucose than did tissues on the inverse side of the brain. In this research work, we focus the causes of brain tumor (cancer) due to the cell phone from this increase in glucose metabolism are still unknown. There are several types of brain tumor psyche (glioma and meningioma), acoustic nerve (schwannoma) and parotid organ. Our research area focuses the glioma and acoustic. The aim of study is to address the aforementioned problems associated with cell phone. Our research area focus, how reduce the effect of cancer with the help of MRI and/or a CT scan and increase the life of human being with the help of chemo therapy. In this research work we do work on brain tumor and apply statistical model for the testing and discuss the images of brain tumor which is created the usage of cell phone. It then goes on describe the solution in the medical terms & implementation and also give some prediction about the future generated by modified technology.

Keywords : Electromagnetic radiation, radiofrequency radiation, heat shock proteins, cancer, Brain tumor, Glioma, Meningioma

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1. INTRODUCTION

Therapeutic imaging gives important data about the human heart. Cellular phones work by distribution signs to and tolerating them from neighboring cell towers (base stations) using RF waves. This is an exhibit of electromagnetic radiation that falls between FM radio waves and microwaves. Like FM radio waves, microwaves, apparent light, and hotness, RF waves are an exhibit of non-ionizing radiation. They don't have enough radiation to bring about development by direct hurting the DNA inside cells. RF waves are not the same as stronger (ionizing) sorts of radiation, for instance, x-rays, gamma rays and bright radiation (UV) light, which can mollify the substance bonds up DNA (see Elder JA, Chou CK, 2003). At unusual states, RF waves can hotness up body tissues. (This work is the reason for how microwave broilers work.) But the levels of radiation given off by cellular telephones are much lower, and are Insufficient to acquire temperatures up the body. Drastically the use of cell telephone has expanded in numerous nations since the beginning ahead of schedule to mid 1980s (Elder JA, Chou CK, 2003).

The developing utilization of this innovation about well being and security has been concerns by going to. In the ahead of schedule of 1990s, low level exposure to radiofrequency (RF) electromagnetic field is the unsafe consequences for wellbeing which is basically inspected by a few specialists gatherings and prescribed examination into the conceivable antagonistic wellbeing impacts of versatile telephony (Carpintero P, Gascón E, Abad JA, Ruza M, 2006). Radiation is the discharge of vitality from any sources. X-rays are the great sample of radiation yet light that is originating from the sun and warmth is always advancing sharp our bodies. Radiation exists transversely a reach from high-vitality "high-vitality" radiation to low-energy "low-energy" radiation. This is in like manner suggested as electromagnetic extent radiation and gamma radiation are the representation of high vitality radiation. (Boniol M, Autier P, Boyle P, Gandini S. Cutaneous, 2012) Which schedules they have sufficient vitality to toss out an electron from (ionize) a molecule. This can hurt the DNA inside cells, which can recognize headway. Radiofrequency (RF) radiation is at the low-imperativeness end of the electromagnetic attained to and is a kind of non-ionizing radiation. Non-ionizing radiation has sufficient essentials to move particles in a molecule around or cause them to vibrate, however inadequate, to ionize (oblige up charge particles, for event, electrons).

RF radiation has a higher centrality than to a remarkable degree low-go over electromagnetic radiation, yet lower essentials than some unmistakable sorts of non-ionizing radiation, in the same course as recognizable light and infrared. Ionizing radiation has fundamentally higher energy (Gandini S, Sera F, Cattaruzza MS, Pasquini P.et.at, 2005). On the off chance that RF radiation is ingested in sufficiently gigantic aggregates by materials containing water, for case, bolster, liquids, and body tissues, it can make heat. This can instigate blasts and tissue hurt. Despite the way that RF radiation does not realize improvement by

harming DNA in cells the way ionizing radiation does, there has been anxiety that two or three indications of non-ionizing radiation may have general effects that could recognize tumor in a few circumstances (Joyce M, Laing AJ, Mullet H, Mofidi A, Tansey D, et.al, 2002). Therefore, the International Agency for Research on Cancer (IARC) invigorated a legitimacy consider between 1998 and 1999, Which expected that a general examination of the relationship between PDAS use and brain tumor threat would be possible and illuminating. Intervene was subsequently moved as a general course of action of case-control studies focusing on differing sorts of tumors in tissues that most adjust RF centrality released by telephones: tumors of the brain (glioma and meningioma), acoustic nerve (schwannoma) and parotid organ (Baan R, Grosse Y, Lauby-Secretan B, 2011). The goal was to comprehend if cell utilization broadens the danger of these tumors and, particularly, whether RF vitality transmitted by remote is tumourigenic. This paper clarifies the postponed results of examinations of brain tumor hazard in relationship with telephone use in all Interphone studies focuses consolidated. Investigations of cerebral tumors in relationship with wireless use have been spoken to from distinctive accomplice, including a couple of the national bits of Interphone. Off- course; have consolidated the same number of uncovered cases, especially entire arrangement and overwhelming clients of PDAs, as this research (Rothman KJ, Chou CK, Morgan R, et al, 2009).

2. MATHEMATICAL MODEL OF TUMOR

There are some steps of tumor, which are the impact of the use of cell phones; each one stage recognizes the indication of tumor from the introductory level to top level of tumor. As we additionally realize that the most widely recognized sorts in grownups are considerate meningioma and a glioma called a glioblastoma multi - forme. A few shots are exceptionally uncommon. Mind tumors can happen at any age. A few shots, for example, modulo-blastoma is more normal in teenagers, and some are more basic in grownups. By and large, the tumors that have a tendency to happen in grownups get to be more regular with expanding age. Metastatic mind tumors are more regular than favorable brain tumors and harmful essential brain tumors (Dimbylow PJ, Mann SM, 1999). Early indications may incorporate migraines and feeling, Acronyms. These are because of expanded weight inside the skull raised intracranial weight. These indications may go back and forth from the start and have a tendency to be more regrettable in the morning. Hacking, winded and stooping may aggravate the cerebral pains. Epileptic seizures, for example, writhing at times happen. Expanding languor e.g. an inclination of being lethargic and lazy may happen as the tumor augments. As a tumor develops it can harm the close-by brain tissue (Hardell L, Näsman Å, Pålsson A, Hallquist A, Mild KH, 1999). The capacities of the diverse parts of the body are controlled by distinctive parts of the

brain. Subsequently, the indications differ from case to case, relying upon which a piece of the brain is influenced and on the measure of the influenced region. Case in point, one or a greater amount of the accompanying may create: Weakness of muscles in an arm, leg, a piece of the face, or eyes, Problems with offset, co-appointment, vision, hearing, discourse, correspondence or gulping, Loss of smell, Dizziness creating happiness or perplexity or flimsiness, Numbness or shortcoming in a piece of the body, Confusion, Personality changes and Symptoms identified with hormonal changes in the event that you have a pituitary tumor (Christensen HC, Schüz J, Kosteljanetz M, etal, 2004). A specialist will inspect you if a mind tumor is suspected from the side effects. This will incorporate looking out for the capacities of the cerebrum and nerves developments, reflexes, vision, etc. A MRI output or CT sweep of the head is the regular tests done to affirm or preclude the vicinity of a cerebral tumor such as separate pamphlets called MRI output And CT examine for more subtle elements (Adjalle R, plouin PF, pacak K, Lehnert H, 2004). On the off chance that a tumor is distinguished, further more point by point sweeps and tests may be carried out. Case in point, a PET sweep or an angiogram is infrequently done to get more data about the tumor. A biopsy may be expected to make certain of the sort of tumor. A biopsy is the point at which a little specimen of tissue is expelled from a piece of the body (Giannestras NJ, Bronson JL, et.al, 2002). The specimen is then inspected under the magnifying lens to search for unusual cells. To acquire a biopsy from a cerebral tumor you have to have a little operation, typically done under sedative. A little gap is exhausted in the skull to permit a fine needle through to get a little example of tissue. By looking at the cells acquired by the biopsy, the definite sort of tumor can be distinguished and, in the event that it is threatening, the tumor evaluation can be resolved (Liebau C, Baltzer AW, Schneppenheim M, O’Riordain Ds, young, et.al, 2003).

3. METHODOLOGY

The proposed system is based on tumor and its calculation which is calculated by MATLAB. In this research paper, we are working on the tumor and its growing size and calculate the area of a regional segment by selecting different size of tumor. Basically the side effect of radio wave frequency cell phone is growing step by step in that time, when you are using a continuously cell phone (approximate 5 to 10 years). These steps indicated the size and define the age of the tumor, then how many years/months/weeks people survive life with tumor.

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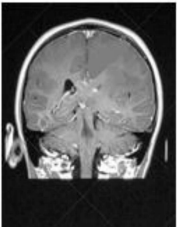
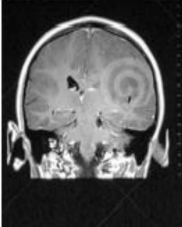
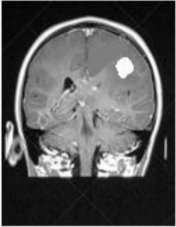
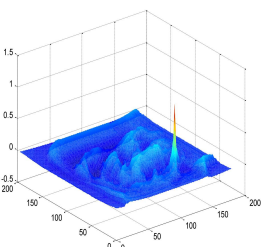
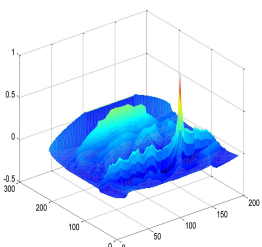
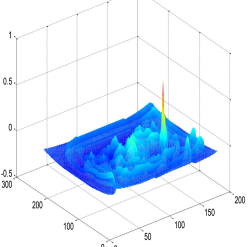
IMAGE 1	IMAGE 2	IMAGE 3
		
		
		
size of tumor= 0	size of tumor= 0	size of tumor= 345
max_c = 1.0000	max_c = 0.9942	max_c = 0.9523

Table.1 images of detection of brain tumor

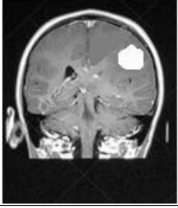
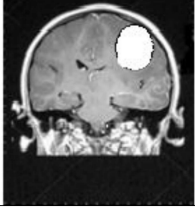
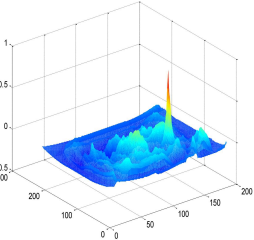
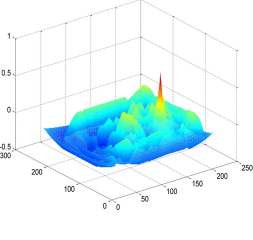
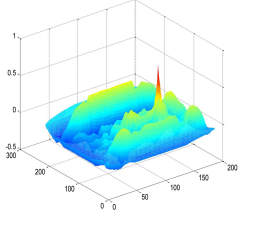
IMAGE 4	IMAGE 5	IMAGE 6
		
		
		
size of tumor = 499	size of tumor = 969	size of tumor = 1210
max_c = 0.9420	max_c = 0.8073	max_c = 0.8729

Table.2 images of detection of brain tumor

4. ALGORITHM

Step.1: Input: Load MRI Image (MRI)

Step2. Get Image (MRI₁)

Step.3: Input: Load MRI Image (MR₂)

Step4. Get Image (MRI₂)

Step.5: images (M*N)

Step6. Select ROI Of I₁ & I₂.

Step.7: Step.10: Applying Gaussian Filter to un sharp Filters

4.1 Applying Multi-Dimensional Image Filtering

$$H = \begin{bmatrix} I_{xx} & I_{xy} & I_{xz} \\ I_{xy} & I_{yy} & I_{yz} \\ I_{xz} & I_{yx} & I_{zz} \end{bmatrix}$$

STEP.8: Save images MRI₁ and H₁

STEP.9: Compare Filtered Images with Original Images

Img1 =image subtract (MRI_{F1} , $MR I_1$)

K1 = Inverse (Img₁);

SHOW Image (K1)

SHOW Image (MRI_1)

And,

Img2 =image subtract (MRI_{F2} , MRI_2)

K2 = Inverse (Img₂);

SHOW Image (K2)

SHOW Image (MRI_2)

Step.10: Isize = Size of the Image

B = Block Size i.e. 2, 4, 8 etc

P [255] = CALCULATE the Maximum Occurrence Pixel Value

Iseg [B][1024] = Segment of Image Read Each Time

Begin

Step.11: Open MRI_1 file.

Step.12: Open MRI_2 file.

Step.13: Open HI file.

Step.14: Loop J=0, Isize

Read size from MRI

P [K] =0

k = K + 1

End Loop

P [Iseg[R]] = P [Iseg[R]]

End Loop

Loop K=0, 255

IF Maxvalue <= P [K]

Hvalue = K

Maxvalue = P [K]

End IF

a=a+1

End Loop

SAVE MRI_{F1} and MRI_{F2}

ImageDiff =image subtract (MRI_{F2} , MRI_{F1})

ExactDiff =MAP (ImageDiff , MRI_{F2})

REM: How much change at bit level

CALCULATE

Result=Number of Non Zero (ExtDiff)

```

CALCULATE PERCENTAGE
[M, N]= Size of Img(Result)
Percent= (Result/(M*N))*100
ELSE
SAVE MR1 and MRI2
ImageDiff =image subtract (I2, MRI1)
ExactDiff =MAP (ImgDiff, I2)
CALCULATE
Result=Number of Non Zero (ExtDiff)
CALCULATE PERCENTAGE
[M, N]= Size of Img(Result)
Percent= (Result/ (M*N))*100

```

Step.15: SHOW IMAGES

CALCULATE the difference.

CONCLUSION

This study depicts the brain tumor using image segmentation of brain tumor among the MRI images and shows the results of our newly proposed algorithm. The genuine medicinal pictures like MRI, PET or CT checks and to take up a research are an exceptionally complex in view of protection issues and substantial specialized obstacles. The reason for this study is to cerebrum tumor identification strategies through MRI mind Images. The MRI information is acquired from the Brain Web Database demonstrates an example MRI brain tumor picture In this research paper, we are dealing with these pictures which are taken into account tumors, applying portion area for tumor with because of the utilization of cell phone. These images are basically representing the size of the tumor and need to calculate the size of the tumor with the help of MATLAB. In this research work, we are focusing the size of tumor and calculate the area of region from step to the last step until the growing sizes of tumor cell. By using a different MATLAB tool we have tested 15 plus samples of the skull, which detects brain tumor location and also applied autocorrelation. Brain tumors and are the main area of our research Accuracy is the main tool of success that's why this study proposes MRI to get the best images and best results.

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