ADEJOH OJOCHENEMI CHARITY

17/MHS01/015

MEDICINE AND SURGERY

WITH THE AID OF A DIAGRAM WRITE AN ESSAY ON THE HISTORY OF AN ORGAN OF CORTI.

The Organ of Corti is an organ of the inner ear located within the cochlea which contributes to audition. . It consists of hair cells and other epithelial structures supported by the basilar membrane. The sensory hair cells have precisely arranged V shaped bundles of rigid stereocilia, each loses its single larger kinocilium during development.  Vibrations caused by sound waves bend the stereocilia on these hair cells via an electromechanical force. The hair cells convert mechanical energy into electrical energy that is transmitted to the central nervous system via the auditory nerve to facilitate audition.

Organ of Corti consists of different types of cells:  
(i) INNER HAIR CELLS:

These cells are specialized in the mechanoelectrical transduction. There are almost 3500 cells disposed in one line along all the basilar membrane. They are connected to type I neuron peripheral fibers of spiral ganglion, these connection are very divergent (10/1). The luminal part of the cell is immerged in endolymph, the basal one is immerged in normal extracellular fluid. The luminal portion is formed by bundles of stereocilia(inner\_ear), whose tips are connected by filamentous structures called tip-links.  
(II) OUTER HAIR CELLS:

These cells are acoustical pre-amplifiers. They are almost 12000, disposed in three parallel lines. These cells are connected to type II amyelinic neurons, the connections are very convergent. They have also an afference from superior olivary nucleus. They have contractile activity.

(III) SUPPORTING CELLS:

Two major types of columnar supporting cells are attached to thebasilar membrane in the organ of corti. The inner and outer phalangeal cells and the pillar cells. When the basilar membrane flexes in responds to sound waves(i.e., sound), the hair cells move relative to the tectorial membrane, causing stimulatory deflection of the apical ends of the hair cells.

