

## Esophageal cancer with medical geology aspect in Golestan province, Iran

### Abstract

**Background&Objective:** Cancer of the esophagus ranks among the 10 most frequent cancers in the world. As esophagus cancer belt is coincide with loess deposits belt of the world, So there is possibility of close relationship between loess deposits and certain endemic diseases such as esophagus Cancer. This study deals with Loess deposits with medical geology aspect toward diagnosis and prognosis.

**Materials&Methods:** In this study sampling from loess deposits from East towards West of Golestan province has been done. Collected samples have been undergone diffraction X-ray (XRD), scanning electron microscopy (SEM) and Energy dispersive X-ray analysis (EDAX) for determination of minerals, Surface morphology of minerals and chemical analysis for further studies respectively.

**Results:** In mineralogical studies dominated minerals are quartz, feldspar and calcite. Clay minerals are illite and chlorite, which are about 9.3%. The amount of quartz is variable from 56.3 to 45.4. The grains sizes are decreasing from northeast to southwest. Chemical analysis of loess deposits contain Si, Al, K and Ca, which are related to presence of quartz, feldspar, calcite, illite and chlorite minerals.

**Conclusion:** According to medical geology evidences, loess deposits of Golestan province could be considered due to the effects of clay minerals on biochemical cycle, chemical composition of loess deposit for its high silica percentage and direct relationship of grain size with ethiology of esophagus cancer incidence. As variation of esophagus cancer incidence in Golestan province in last 30 years indicates that still high percentage of esophagus cancer incidence which is reported in eastern of province is occurred on loess deposits.

**Key Words:** Esophagus Cancer- loess deposits- Medical Geology- Golestan Province

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