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**Stem-cell-based, tissue engineered tracheal transplantation in mustard gas exposed patients suffering from tracheomalacia**

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**Statement of the Problem:** Mustard gas (bis (2-chloroethyl) sulfide) is a chemical weapon which was used in World War I for the first time. The exposed victims of Mustard gas suffer from severe respiratory difficulties; such as, chronic cough, paroxysmal dyspnea, asthma like attack and opportunistic respiratory system infections. Palliative therapies such as, anti-inflammatory drugs, broncholytics, long acting B2 agonists, inhaled corticosteroid and proton pump inhibitor are the current choices of treatment; however, desensitization of beta adrenergic receptors and refractory Gastroesophageal Reflux Disease (GERD) are causes expressed for the inefficacy of these treatments.

**Methodology & Theoretical Orientation:** Chest high resolution computed tomography of these patients illustrates the high prevalence of air trapping which is due to tracheomalacia. Suggesting that the reason for inefficacy of current treatments is not as simply as GERD or desensitization of beta adrenergic receptors; and structural damages are responsible for severe respiratory complications. There are several successful case reports in the field of air way transplantation who suffered from large airways structural abnormalities based on different pathologies; they recovered their health after air way transplantation with stem cell based bio artificial graft.

**Conclusion & Significance:** Theoretically, it seems that stem cell based tracheobronchial reconstruction can be beneficial treatments for patients who suffer from severe respiratory difficulties and tracheomalacia due to Mustard gas exposure.

**Biography**

Seyedehparvin Khazraei is a final-year Medical Student at Shiraz University of Medical Sciences. She is currently working as a Medical Intern and will receive her Doctor of Medicine degree in 2017. Seven years ago, when she just started medical school her dream was to help patients as a Doctor in the hospital but gradually she learned that she will be more successful and happier if she focuses on research. This way she believes she can even inspire more people and contribute to science. Her field of interest is Toxicology and she has a great passion for performing researches on the patients, suffering from gas and chemical exposure.

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