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Oral Presentations

O1

Importance of Child Safety on the Road

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The Neuroscience Journal of Shefaye Khatam, 2016; 3(S3): O1

Worldwide, more than 185,000 children under 18 years die from road trafficaccidents annually (each four minutes a child death occurred due to road crashes); with most casualties from developing countries. 95% of road traffic fatalities among children occur in developing countries. Many more children are injured, often severely, and suffering from different disabilities. Road. accidents cause extensive psychological disorders and grief, and occasionally economic hardship for families. Furthermore, traffic accidents cost societies.precious resources, diverting these from other health as well as development.challenges. Mandating and enforcing child restraint laws for all private.vehicles, putting in place internationally recognized manufacturing standards for child road safety, improving children's ability to see and be seen,adapting vehicle design for children, providing appropriate care for injured.children, etc., are important points in enhancement of children road safety. Road crash death, injury, and disability are preventable. This is crucial for.each country to address these points in order to save the lives of thousands of children and protect their nations countless resources

O2

Post-Crash and Trauma Care for Children

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Road traffic injuries as a man-made calamity impose great burden on poor people and needs to be addressed through social justice and end of poverty. pointing out that around 186,300 children under the age of 18 are killed every year, and much more are injured, urgent need to work on road safety measures will be revealed. Although preventing road traffic crashes from occurring should be the main goal to be pursed, Post crash care as one of the pillars of the decade of action on road safety is important to avoid preventable death and disability, limit the severity of the injury and the suffering caused by it, and ensure the crash survivor's best possible recovery and reintegration into society. This paper focus on pre-hospital and hospital infrastructure and capacity within the ministry of health & medical education, importance of universal access number(UAN) and integrated dispatch center and role of laypeople to prevent death and disability in different age groups and challenges the current system face to handle children as victims of road traffic injuries.

O3

Children are Not Small Adults! What should be done to Better Protect Them?

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Road Traffic injuries are known as the most prevalent childhood injury and besides being the greatest cause of child mortality, place an extraordinary burden on health care system. Children's limitation in cognitive, physical and social development makes them more vulnerable in road traffic injuries than adults. Their small structure

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cause challenges to see and be seen and their risk taking behavior and false braveness expose them to road traffic injuries. Keeping children safe as the theme of the 3rd global UN road safety week and another step in the decade of action on road safety focusing on safe road users as one of the fifth pillars of the decade, is an opportunity to address children as one of the vulnerable groups. This study will draw attention to the urgent need to better protect children on roads and explain road safety measures in place within the health sector and highlights what's needed to improve road safety for everyone as road safety for children seems equal to road safety for everyone.

O4

Parents, Teachers and Child Education to Prevent Trauma of Traffic Accidents among Children

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The most important strategy to modify high risk behavior, to prevent traffic accident and decrease death is effective education. It is necessary to have systematic steps with scientific background to educate effectively. The health educator has essential role in every education program; therefore the first question to ask is who should educate? The next in an education for reduce traffic accident is whom should receive education? The educational needs of diverse groups due to their roles, individual and environmental issues are different. Therefore, it is necessary in successful education program to have concrete audience profile. These information assist to develop messages and content for different audiences. Because of dissimilar interests, accesses, limitations, before each education program we should define appropriate instructional methods and media. The time of education also is important, so we should ask what time is effective. Which place is better for education? How much time should allocate to educate? How long it should be repeated? Do this education program present effectively? In this lecture, we will provide the answer to these eight questions.

O5

Children Need Our Protection Poly Trauma in Children-What Makes the Difference

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Children are not little adults. Children have a limited responsibility corresponding to their age. Germany experiences a steady decline of road traffic injuries and fatalities in children to 28674 injured children under 15 years and to 71 fatal injured children in 2014. In the European union similar data are available, but with a major difference between the countries. An evaluation of the data from the German trauma network (1997-2010) is based on 47915 poly trauma - patients. In this group there are 3522 (7.4 %) children and adolescents under 18 years. For an effective medical treatment the trauma hospitals work together in a trauma network, which is organized and certified by the German trauma society a NGO (DGU). The data for the trauma network are generated by the trauma register of the DGU, which collects specific data since 1993. Specific mechanism and pattern of injury can led us to a more specific prevention. e. g. Blood loss in children endanger the life in a very short periode. The golden 20 minutes for first aid in children should be observed in contrast to the golden hour for adults. Education and teaching of our broad possibilities of prevention will reduce the burden of traffic accidents. All citizens must take responsibility to protect the children in our country.

O6

How to Encourage Building a New Road Traffic Culture for Children in Developing Countries

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Road traffic accidents (RTA) are one of the most important causes of death and disability all over the world. In developing countries the problem is more complicated. Based on the estimation by Unicef, rate of RTA in Iran is 20 times more than world's average. In Iran among all unintentional fatal injuries inflicted on children under five, traffic related fatalities are the leading cause of death. By the year 2020 road crashes will rank ahead of cancer and behind only part disease and depression in times of life years. globally RTA is the second leading cause of death for young people aged 5–25 years. There is an international consensus that a combination of public education, law enforcement and changing infrastructures are necessary to reduce the rate of RTA and its detrimental effects. Public education is cost effective and should be performed in setting of schools, media, community centers, NGOs and especially religious gatherings as these ceremonies has considerable impact in culture and behavior in developing countries. In addition, the education should be included road safety officers, institutions, children

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and parents, sponsors and government and police. Law enforcement seems not to be cost effective and can be achieved by reinforcing and/or aversiveness in association with persuasion and punishment. Monitoring using police officers and modern systems of road control such as traffic cameras are necessary to ensure respecting the laws. Although changing infrastructures imposes a high financial burden on the society in short-term, but it will be a cost effective approach in long-term evaluation. Measures to improve road design and infrastructure include separating different types of traffic, providing safer road for pedestrians and cyclists, building pavements and recognizable crossing structures for pedestrians, reducing traffic speeds by constructing speed bumps, rumble strips and roundabouts.

O7

Epidemiology of Road Traffic Injuries among Children

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Of all the unintentional injuries among children, about 38% are from children's road traffic injuries (RTIs). This denotes 16.5% of mortality among children out of the global mortality for due to RTIs with fatal outcomes. As children grow older the predominant type of their injuries changes. Children aged among 5-19 are more likely to be injured on roads. They are mainly victims of the adults' faults. Many children do not just use the streets for school journeys or as pedestrians. They also use them as a meeting place with friends and as a playground. In many inner city areas, there are few safe places for children to play. Most parents judge the outdoor places where their children play as safe. Child casualties are lower in the winter months and highest in the summer months. This may be because longer daylight hours in these months combined with better weather, gives children extra hours to play outside the home. Rates of road traffic injuries are higher in older children, boys and more economically deprived children.There are some of explanations for these variations, for instance variations in risk exposure, maturity, environmental hazards and children's behaviour regarding these variations in other age groups and other situations. There are still many unanswered questions about children's injuries. For example we do not know parents' judgements about their outdoor environment. Are parents well-enough informed? The role of children's play patterns on risk of accidental injuries has not been studied, and the level of independent outdoor activities in children is not clear. What are children's main risky outdoor activities? And are children able to recognise these activities as risky? Do answers to the above questions vary by age, sex and deprivation? And if so, can these variations explain injury rate differences in different ages, sexes and socio-economic groups? It can be concluded that the epidemiological pattern of children's RTIs is completely different from adults. Children are more vulnerable on roads and these could be resulted from different exposure to risk, their risk perception, amount of parents supervision, variation of their growth and developments ant their behavioural and play pattern.Considering of children's particular needs is essential on road safety. It is their definite right to live in a safe environment and it is the adults' responsibility to provide such an environment for them.

O8

Actual Situation of Child Safety in the Iran Roads

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It's obvious that road safety is causing large problems and costs in Iran with an enormous impact on the well-being of people, economy and productivity. The yearly number of fatalities and injuries is still unchanged. Motor vehicle injuries lead the list of injury deaths at the all ages during childhood and adolescence ,even in children under 1 yrs of age. Understanding the actual of child road safety situation in Iran and present injury prevention strategies based on global road safety is necessary for improve the preventive rules. I try clearly show that driving habits and codified rules are both effective in child road injury. I stresses the need for reliable accident data with special mention in child age group since there is a large underreporting. Reliable accident data are imperative to determine evidence based intervention strategies and monitor the success of these interventions and analyses.

O9

Securing Children in Cars from the Trauma Biomechanical Point of View. A Historical and Global Perspective

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Since the 1960 Child Safety Systems in cars have been developed. The 3 point safety belt for adults rated as one of the 10 most Important inventions for mankind, the seat belt has saved more than 1.5 million lives. As well children have to be secured in a car but the 3 point belt is designed for adults. A 27 kg child is forced forward with 1.200 kg at 48 kph impact velocity. Here vulnerable body regions of 0-12 year old children need to be protected. Different body regions (head, spine, thorax and abdomen) will be discussed. The presentation will outline the effects of securing children in Germany, Sweden and other countries. Countermeasures to prevent paraplegia, head trauma and thoracic and abdominal injuries will be presented. The effect should result in a significant reduction of child fatalities and the reduction of severe and long term injuries in car accidents with children in the future.

O10

How Child Protection in Cars can be Improved in Iran? Suggested Approach

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The presentation will focus on the key areas that are essential to build a comprehensive policy to3.wards reducing child injury and fatalities. The presentation will focus on the importance of the public awareness (education on the use of child restraint systems), the need to have an overall road safety programme, law enforcement (mandatory use of protection systems for children in car) and finally a technical standard which must be met by all child seats to be sold in Iran.

O11

Safety Potential of Advanced Driver Assistance Systems

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Advanced driver assistance systems (ADAS) have the potential to accomplish a major contribution to road safety. This is valid for minor crashes to very severe accidents with personal injuries. The allianz centre for technology attends the development of new driver assistance systems by carrying out accident analysis and estimating the efficiency of new ADAS. In this context new ADAS from different car manufactures will be presented and current results of the efficiency of dedicated systems will be discussed.

O12

Excessive Daytime Sleepiness, Dozing at the Wheel and Road Safety

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It has been documented that nearly 25-30% of automobile collisions are potentially associated with driving fatigue. We have little control over sleep propensity when chronically sleep-deprived or suffer from an underlying sleep insufficiency. Drowsy driving is not only a personal but also a public hazard and commercial drivers with alternate shifts are critically at risk. People on monotonous drives and those with undiagnosed sleep disorders such as sleep apnea and narcolepsy show to sleep or doze-off while driving. Sadly, traffic collision ranks the second most common cause of mortality in Iran. Several studies have reported that obstructive sleep apnea syndrome (OSAS) increases the risk of car crash. We have epidemiological evidence indicating that above 20% of the Iranian population suffers from various degrees of OSAS. Based on the studies, history of witnessed apnea during sleep is one of the most important predictors of motor vehicle accidents. We suggest testing public transport drivers in fars province for OSAS risk using the Berlin and Stop Bang questionnaires. Cases who are distinguished as high risk for OSAS would then need to undergo further evaluations using actigraphy or polysomnography (PSG) in our standard hospital-based sleep laboratory. Subsequently, patients who are found to suffer from moderate to severe OSAS (apnea-hypopnea index or AHI >15) with proven excessive daytime somnolence would be targeted to receive proper medical care. The current standard of care for OSAS is the continuous positive airway pressure (CPAP). When employed appropriately and under the close follow up of sleep experts, CPAP is shown not only to improve nocturnal sleep quality and ameliorate daytime sleepiness, but also improve patients' daytime vigilance and neurocognitive agility parameters such as attention, memory and

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executive function represented by reduced reaction time in driving. Current sleep research findings in Iran indicate that many people with untreated OSAS still involve in high-risk jobs including public transportation. When attempting to make our roads safer, the drowsy driving issues and underlying medical factors should be taken into consideration. Well-designed studies need to focus on the prevalence of this syndrome among the population and the public transport drivers in particular.

O13

Testing for Protection of Children in Cars

Dierk Arp

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This lecture introduces testing methods for the protection of children in vehicles. In order to reduce the fatalities and injuries of children in transportation state of the art child protection is mandatory. Global laws and regulations such as ECE or FMVSS are introduced and compared with new car assessment programs (NCAP). Engineering tools and equipment to test according to global child protection regulations will be introduced and described in detail.

O14

Typical Injuries of Children during Car Accidents

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Injuries suffered in vehicle traffic crashes are the leading cause of death among children in many countries. Prevention of injuries of children in raod accidents is still a challenge. The present lecture discuss the commonly injuried body regions in children involved in motor and non-motor vehicle traffic crashes. Head, ribs and lung are commonly injured body regions among children under 8 years in vehicle crashes.

O15

Standard Policy in Child Safety in Road Accident and Common Fractures in children

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Injuries caused by traffic accidents cause many deaths and disabilities children. Road traffic injuries are the main cause of death between the ages of 15 and 19 years and is the second cause of death among 5 to 14 year olds. Children's attitudes about driving and safe use of roads formed in 11 years. Road traffic injuries is one of the five cause of disability among children. Most victims between become disable 6 and 12 months after the accident. The road is constructed in accordance with the adult environment. When the children enter the road , they facing up high risks. Children 5 to 7 years old are familiar with the concepts of speed and distance but can not rely on their visual sense while crossing the road ,they cannot recognized distance and speed of the machines . Visual processes until ages 10 to 12 years old children not completed for crossing the road. The greatest risk to children who sit behind motorcyclist what should be done to prevent accidents?

- Separation of the two-wheeled vehicles
- Slowdown
- Child safety equipment
- Helmets
- Increase the visibility of children
- Road safety education and training

In case of accident probability and severity of fractures varies depending on the type of truma. According to the growth plate of bones, the bones of children are different from adults .If fractures happen in the growth plate likely to develop complications such as organ shortening and angular deformity.Open fractures have greater risks for infect. Ion and nonunion.

O16

Using Simulator to Measure the Skills of Taxi Drivers and Increasing the Safety of School Services Vehicles

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In our country, student transportations' security and driving accidents statistics for students is one of the major concerns for relevant organizations such as educational organization. In current year, a system, was named Sepand, was formed in city taxi driver union by educational organization, NAJA traffic and city taxi driver union. In this systems' plan, basis on information technology (IT) and intelligent transport system (ITS),

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applicants' registration process for activity in students' vehicle service background was predicted according to professional driving principle. Sepand plan has several characters such as selecting the best driver for students' vehicle service with simulator device, mobilizing some vehicle with location finder intelligent systems, fingerprint system, surveillance camera system and voice recording inside the cars. In this plan, we can refer to participate of women specially in girls' schools, priority to experienced taxi drivers in students' vehicle service, observing students' vehicle service from beginning to destination in the moment and sending messages of events in way intelligently, drug abuse test according to behavior in stimulator, replacement of current fleet with intelligent fleet with appropriate standards for school vehicle service.

O17

A Hospital Based Injury Prevention Program: The P.A.R.T.Y. Program (Prevent Alcohol and Risk Related Trauma in Youth)

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The prevent alcohol and risk related trauma in youth (P.A.R.T.Y.) program is an injury prevention program set up in 2011 at a level-1 trauma center in Germany. Its objective is the prevention of road traffic accidents among young road users. Our goal is to enable adolescents to recognize risks and to improve life-changing behavior to reduce the severity of injury and the number of killed young road users. Since 2011, a standardized program was set up. It is designed as a 1-day interactive course showing the workaday life of a trauma unit and to provide information about potential physical and psychological impact that result from traumatic injury. Besides showing young road users the way of trauma management using an in-vivo setting, the party program is supported by former trauma patients, the police and paramedics who talk about their daily life. At present, the program is set up in 18 locations and was done more than 200 times in trauma hospitals across Germany. To obtain a certain standard, instructors are getting educated to set up the program across the nation. A first systematic evaluation was made between 2011 and 2013 including 219 young road users. The results were analyzed to find out whether it is possible to implement the program and the impressions gained by the participants of the program in order to be able to make further adjustments. A national study designed as a complete survey evaluating efficiency and awareness concerning high-risk behavior of young road users is planned for 2016/2017. Based on the results of our first evaluation we are able to show a positive feedback with regard to the implementation and feasibility of the program. All participants reviewed the structure of the program with the help of school grades. 59% (n=129) of the participants rated the program as "very good" and 41% gave the rating of "good". Overall, 70% of all participants advocated that all people the same age should participate in the program. The structure was described as being well-balanced with respect to the theoretical and practical items. The P.A.R.T.Y. program is a standardized and well-established concept that can contribute to accident prevention in Germany. It provides the possibility to implement an accident awareness program throughout Germany. Initial results show that the program can be implemented in German hospitals. further investigations are needed to proof efficiency and an alteration of awareness in young road users.

O18

In Hospital Manegement of Child with Road Trauma

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Trauma is the most common cause of mortality and morbidity in pediatric population. Caring for the injured child requires special knowledge, precise management, and scrupulous attention to details. All clinicians who are responsible for the care of a pediatric trauma patient, including pediatricians, pediatric emergency room clinicians, and trauma surgeons, must be familiar with every tenet of modern trauma care. The special considerations, characteristics, and unique needs of injured children must also be recognized.The primary survey or initial phase of resuscitation should address life-threatening injuries that compromise oxygenation and circulation.Airway control is the first priority. Unlike adults, the cause of childhood cardiac arrest is an initial respiratory arrest. A child's airway is anatomically different from an adult's.All pediatric trauma patients must be assumed to have cervical spine injury until proven otherwise.Once a patent airway is established, carefully assess the child's breathing. If respiration is inadequate, provide ventilatory assistance.Infants and small children are primarily diaphragmatic breathers; their ribs lack the rigidity and configuration present in adults. As a result, any

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compromise of diaphragmatic excursion significantly limits the child's ability to ventilate. Direct injury to the diaphragm, disruption and herniation of intra-abdominal contents, or gastric distension (aerophagia) can severely compromise the infant or small child's ability to breathe. The mediastinum of a child is very mobile; therefore, mediastinal structures can shift into the contralateral hemithorax as a result of a simple pneumothorax, hemothorax, or tension pneumothorax. The clinician must recognize these emergencies and intervene as needed.Recognizing hypovolemic shock in pediatric trauma patients is essential to ensure a positive outcome. Tachycardia is usually the earliest measurable response to hypovolemia. In addition, mental status change, respiratory compromise, absence of peripheral pulses, delayed capillary refill, skin pallor, and hypothermia are all possible early signs of shock that must be immediately recognized. Children are known to have an amazing cardiovascular reserve, so the initial normal vital signs should not impart any sense of security with regard to the status of the child's circulating volume.Initial fluid resuscitation should consist of warm isotonic crystalloid solution (Ringer lactate or isotonic sodium chloride solution) at a bolus of 20 ml/kg.Children with evidence of hemorrhagic shock who fail to response to fluid resuscitation should also receive blood (10 ml/kg) and be evaluated by a pediatric surgeon for possible operative intervention. Avoid accidental hypothermia during the initial phase of resuscitation. Hypothermia results in vasoconstriction, low-flow state, acidosis, and consumptive coagulopathy. Once the primary survey has been completed, address the issue of pain control. Manage pain on a case-by-case basis.Early surgical evaluation is important for high risk patients.As with adults, radiographic evaluation of the cervical spine, chest, and pelvis has become an integral part of assessment of injured children.Blunt trauma is responsible for most intra-abdominal injuries. Injuries of solid organs predominate, particularly injuries of the spleen, followed by the liver and kidney. However, the mortality rate for children from severe blunt trauma is higher than the rate from penetrating injuries because of concurrent CNS, chest, and skeletal injuries. Fortunately, nonoperative management has a 90% success rate and has become the standard of care. In children who are hemodynamically stable with possible thoracoabdominal injury, CT scan is the preferred imaging technique.

O19

Clinical Approach in Pediatric Trauma According to ATLS

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To identify anatomic and physiologic characteristics of children which are different from adults and to explain major patterns and responses of different types of injuries and to apply ATLS principles in management of injured kids and to emphasize on injury prevention to reduce the impact of injury in children. Children have larger head, smaller jaw, shorter, narrower, funnel shaped airway, softer cranium, open fontanelles, and prominent occiput in younger child. Therefore, we need one inch pad under trunk for neutral position. Children have flexible spinal ligaments, anteriorly wedged vertebrae, flat facet joints, angular momentum forces, pseudosubluxation and spinal cord injury without radiological abnormality. The kids chest is soft, pliable, predispose to soft wall pulmonary contusion. Kids have horizontally aligned ribs, weak intercostal muscles. Abdomen is softer, and has thinner muscular wall. Spleen and liver is lower-riding. However, bladder is higher-riding. There are a few important physiologic points in children: Age-specific vital signs, smaller blood volume, decreased functional residual capacity, limited cardiorespiratory reserve and sudden deterioration, different urinary output, higher body surface area to mass ratio, thinner skin, less insulation by subcutaneous tissue. Children have larger tongue which predispose for more airway obstruction. Children have high anterior larynx; therefore we should use straight blade for endotracheal intubation. In children, head injuries are more common than trunk injuries. Thus, CNS and respiratory problem are more prominent than shock. Kids have much smaller trunk and fewer truncal injuries. Children have much larger head and more brain injuries. Children have more compact bodies and multiple injuries are typical. To give medications and fluid, broselow tape is recommended. Pedestrian child has soft tissue contusions and lower extremity fractures if the trauma has slow pattern. However, head, trunk and lower extremity fracture is seen in fast patterns. When a child is automobile occupant and s/he is unrestrained, head, face and spine injury occurs. If s/he is restrained, lap belt complex occurs. Bicycle injury in a child without helmet might be associated with head, face, spine and upper extremity fractures. Handle bar can cause liver, spleen, pancreas and duodenum injuries. Law fall is associated with soft tissue contusions and upper extremity fracture. But high falls are associated with head, face, spine, abdomen and long-bone fractures. In treatment, ATLS principles and ABCDE priorities are the same. Airway obstructs easily; uncuffed endotracheal tube is used. Tension pneumothorax has poor outcome; therefore, we should avoid barotrauma. Vascular access and delivery of fluid and blood is important. Pediatric Glasgow coma scale is used to evaluate diffuse brain edema of patients. We would consider gastric dilation and prevent heat loss. There are some pitfalls: During

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intubation, one has to prevent main stem bronchial intubation due to short trachea. Take care to prevent obstruction of endotracheal tube. Hypovolemic shock has an unreliable presentation. In children less than six years old, intravenous access is difficult and missed hollow viscus injury is common. CT, DPL, FAST and different tubes are adjuncts. To detect abuse injuries, in history, we would have high suspicion in discrepancies, delay in care, repetitive injuries, inappropriate responses and medical neglect and in physical examination, take care to multicolored bruises, bilateral subdurals, retinal hemorrhages, femur fractures and abnormal injury contact burns. To prevent injury, analyze injury data, build local union, communicate the problem, develop prevention activities and evaluate program interventions.

O20

Primary and secondary Survey in Pediatric Trauma

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During the primary survey life-threatening or limb-threatening conditions are identified and management is instituted SIMULTANEOUSLY . Priorities for the care of Adult , pediatrics & pregnancy women are all the same.You should do rapid sequential way to assess the patients in 10 seconds treat as you find life threatening condition and repeat if at any time unstable vital signs should be repeated every 5 minutes during the primary survey and every 15 minutes thereafter until the patient is considered stable. The primary survey for pediatric trauma patients can be remembered by A, B, C, D, E, F. Airway & cervical spine protection, breathing & ventilation, circulation with haemorrhage control, disability (neurologic status) exposure / environmental control, family serves to identify any potentially life-threatening cardiopulmonary injuries that were not immediately evident in the primary survey. This assessment is a complete examination of the patient from top to toe, both front and back .Imaging prior to secondary survey CXR (AP only) pelvis (AP only), c-spine: lateral, AP and odontoid if cooperative .Ample histor is like blowe: A allergies, M medications, P previous medical/surgical history, E events /environment surrounding the injury, L last meal (time). In the head we should search for: lacerations, contusions, fractures, burns, Face: maxillofacial fractures, battle signs, look in mouth, carbenaceous sputum, soot, singed hairs, nose for CSF leak, eyes: pupil size and reactivity, hemorrhage, racoon eyes , ears: battle signs, hemotympanum, CSF leak,corneal reflex .In the neck: inspect for blunt injury, penetrating injury, palpate for deformity, tenderness, swelling, subQ emphysema, symmetry of pulses, listen to carotids palpate C-spine.In chest: blunt or penetrating trauma, acc muscle use, chest expansion, JVD ,breath sounds and heart sounds, tenderness (AP and lateral compression), rib tenderness, crepitation, subcutaneous emphysema, percuss for dullness. In abdomen: blunt or penetrating trauma (look closely at sides hepatic and splenic injury may be suspected by lower rib cage lateral abrasion), bowel sounds, palpate for tenderness, guarding, rebound; percuss for tenderness, DPL, AB// US, ABCT, pelvic xrays as appropriate.

O21

CPR, Airway Management and Anesthesia in Children Injured in Road Accidents

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Many of injured children will require surgical treatment with involvement of the anesthesiologist. The anesthesia providers may have to take care of pediatric patients on following occasions:

1. Initial stabilization in the emergency department
2. Providing sedation and monitoring for imaging
3. Preoperative management of emergent surgical procedures such as laparotomy or craniotomy
4. Management of semi elective surgeries after initial stabilization such as long bone fracture fixations
5. Intensive care unit management of these patients
6. Pain control during hospitalization, especially using regional analgesia.

Therefore, anesthesia providers should be familiar with the principles of management of pediatric trauma as well as with age-related specific anatomical and physiological aspects of trauma care.

- Anesthetic Management.
- Preoperative evaluation and management.
- Airway assessment and management.
- Intraoperative management.
- Intraoperative fluid management.
- Temperature control.
- Emergence and postoperative period.

O22

The Investigation of Decreasing Traffic Accidents in Children by Education and Culture

Fahimeh Ghanadi, Zahra Shakibaie

Health Home of Municipality, Tehran, Iran

The Neuroscience Journal of Shefaye Khatam, 2016; 3(S3): O22

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Accidents allocate more than 30 percent causes of mortality and are the most common reason of mortality in children after one year old. Thus, in order to provide children health, education of road safety is essential and children should be more aware about road safety necessities and learn the methods of life maintenance proportionate with own age and needs. There is a significant note that education should be started from childhood by family and educational system, because it will show the itself favorable effects in the future and since children play important roles in future in their countries and are the most important factor in promoting culture and social, thus education of traffic culture to them will be effective. Education of traffic topics is one of the most issue in prevention of injury due to traffic difficulties and its effectiveness can be felt better when be able to used from various methods of theoretical and practical educations via different institutions including: schools, family, broadcasting, traffic. On the other hand, according to the major role of human fault in road accidents, road safety education to children cause to improve beliefs, attitude and safe behaviors, so that its positive effects will be appear in future and adulthood. The investigations were shown that education about correction of traffic behaviors in children, improving children awareness from risks due to traffic accidents have positive effect and according to this, we express suggestions for establishing traffic culture between children.

O23

Traffic Accidents in Children

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Accident is one of the dangers that threated the child's life. 85 percent of mortality in children in the world is related to accidents. Lack of use seatbelt for children in raer seats is one of the major reasons of children mortality. Unfortunately, in 70-75% cases, damage in children occurs in their face and head. Also, the physical damage can lead to maim and death in children. On the other hand, accident has psychological effects on children and their family and has financial burden on society because of individual life's changes. Children can learn rules in three steps: education of rules with various educational methods, modeling from adult, being in real space. The effective factors in occurring accident in children include inappropriate design of traffic signs, little knowledge and awareness in parents about appropriate facilities for children, lack of attention into rules in parents, lack of accuracy in autos and children's safety facilities manufacturers. In according to these factors, appropriate educations should be considered in various levels and the use of this safety facilities should be cultured as a essential principal in people's life till we will observe decreasing of traffic accidents in social.

O24

Reduction of Traffic Accidents with Justice Evaluation Intervention

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Almost 1.2 million people pass away in the world every year due to traffic accidents. Person, road and vehicle play important role in accidents that the most important factor is person. Traffic accidents are the third cause of mortality in the world. Modification and implementation of traffic laws and improvement of safety culture are being able to decrease traffic accidents. this descriptive study was included five plans: informing, education, commission, camping and festival and was performed in an area of Tehran in a short period of time. The results were reported during and the end of the plans and the weak and strength points of activities were recorded. our results were shown in this educational plan, level of knowledge in 80% of participants about traffic accidents was improved and they tried to introduce 5 another citizens into this educational plan as participants. Moreover, 8 damaged participants introduced into counseling center that 7 person were satisfied from consultation. the most important problems in individual consultation were related to fear, anxiety and depression.

O25

The Plan of Temporary Assembling of Flag on Childrens Umbrella

Ali Farzipour, Farzaneh Rasam

Health Home of Manucipality, Tehran, Iran

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The reason for designing an ensign umbrella returning to a historical research was conducted in conjunction with the first steam train. Investigating a parliamentary approval of Great Britain about movement of first steam trains, it can be concluded that, permission was given to a company to move its trains in the city only when engaging a person with red flag as vanguard. Accommodating first movement of train with this movement helped people to trust this iron giant instead of abhorring. Goals: 1. Enhancement of children safety while crossing the street. 2. Better visibility of children by heavy cars. 3. Reduction of road accidents and consequently children damages. Procedure: Children open their umbrella while crossing the street so that the installed ensign has ability to opening and closing accompanying with umbrella. On the ensign,

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a poetry has been curved entitled "my speed is higher than you". This ensign is red and has ability to installing on the children's umbrella, backpack and hat. Expected results: 1. Existence of ensign on the umbrella accompanying its color, attract drivers attention significantly. 2. Vertically installation of ensign on the umbrella and making higher height, leads to better visibility of children in street. 3. Due to curving an emotional poetry on the ensign, results in speed reduction by drivers remarkably.

O26

Assembling Stable Children's Seat in Rear Seat's Auto

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During centuries, humans have changed their environment into a perspective of cultural heritage using tact and wisdom. These perspectives that show the legacy of human civilization, have established a long cultural relationship via safety international pathways. Hence, Investing for maintenance of critical infrastructures which is the safe way, seems to be necessary. The main problem is not the cost of creating safety methods, but investment is important in all aspects especially cultural heritage. To institutionalize a utility method, first the logic should be explained and the reason of using such a method must be described to users with widespread advertising. So a great investment is needed to triggering a method that is optional in a society. 1. Increasing the safety of children (the advantages of these kinds of seats in contrast to seats that will be installed next in the cars are more safety). 2. Installation of child seat during process of car manufacturing. 3. Reduction of cost for preparation of child seat separately (so that in this case, the suggested method make a priority and advantage for discussed car). Procedure: When having such a seat is optional, most customers prevent installing it with a variety of excuses such as additional costs and cause to irrecoverable damages to their children and themselves as well. In order to forcing people to preparing this kind of seat, a seat has been designed by eslamshahr team that can be installed on the back seat, precisely behind the driver by car factory. When seat cover opens, the child can be placed in it, and when adults want to get on the car, this seat can be reset. Fabrics with a variety of colorful pictures can be used as upper cover of seat so that have safety from the aspect of allergenicity for children as well.

O27

The Role of Hydrogels and Cell Based Therapies in Regeneration of Spinal Cord Injury

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Spinal cord injury (SCI) is one of the devastating conditions leading to functional and neurological deficits following road traffic accidents. To date, there is no definite treatment for repairing damaged spinal cord tissue. In this regard, cell therapy opens a new window in front of scientists by using different cells such as mesenchymal stem cells, olfactory ensheathing cells, Schwann cells, neural stem cells and induced pluripotent stem cells. But, cell therapy faces some problems related to cell survival, migration and differentiation. Based on the results of recent studies, supporting the transplanted cells with a proper scaffold can be helpful. Among several scaffolds, hydrogels are outstanding one with several beneficial properties for neural tissue engineering. The future of SCI regeneration is probably linked to combinatorial approaches in which both cells and scaffolds play its significant roles.

Poster Presentations

P1

Three Dimensional Cultivation of Neural Stem Cells by Pura Matrix

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There are two main methods for preparing the PuraMatrix (PM) as a three-dimensional (3-D) scaffold for supporting the cells including surface plating and encapsulation. In the surface-plating procedure, the

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scaffold is created by adding an ionic agent such as medium to PM. After adjusting the PH by changing the medium, cells are seeded on top of the scaffold. In the encapsulation method, PM and cells are mixed suddenly to produce a true 3-D culture. Because PM is very acidic agent, it can be harmful for sensitive cells such as neural stem cells. We introduced a new method for solving this problem. In this novel approach, firstly, scaffold was created, then, the neural stem cells were injected into the several sites of it. In this method, the survival of the cells was significantly high than that of other methods. This method can be used in future investigations in which a 3-D culture of neural stem cells in needed.

P2

Determining the Effectiveness of Group Play Therapy on Behavioral-Cognitive Basis in Reducing the Symptoms of Post-Traumatic Stress Disorder of Children Aged 6 to 10 Who Witnessed the Death of Their Family Members in Car Accidents

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car accidents ending up with death have often existed in the country's roads, and children who witnessed the death of their family members are highly prone to psychological diseases including posttraumatic stress disorder. Since this disorder may affect children's intellectual growth and mental performance as well as causing mental damages, contributing to the treatment of this disorder takes on special importance. For this reason, the research was conducted with the aim of determining the effect of group play therapy in a behavioral-cognitive manner on the reduction of posttraumatic stress disorder among children aged 6 to 10 who witnessed the death of their dear members in car accident. the method was a quasi-experimental study. At first, children referred to child psychiatry clinics in Tehran, were identified by Rutter's Child behavior questionnaire in order to evaluate behavioral symptoms and Yule's scale for evaluating the symptoms of posttraumatic stress disorder, which was completed by their relatives. Subsequently, 20 children with this disorder were selected as sample randomly and divided into two 10-member groups randomly, experimental and control. The experimental group was treated by group play therapy in a behavioral-cognitive manner in 8 sessions on a weekly basis, and the control group received no intervention. Data were statistically analyzed by covariance analysis. The results indicated that group play therapy based on a cognitive-behavioral technique during posttest reduced the symptoms of posttraumatic stress disorder (P<0.01). group play therapy on cognitive-behavioral basis can be effective in reducing the symptoms of posttraumatic stress disorder in children witnessing the fatal accidents of their beloved relatives.

P3

The Introduction of Traditional and Modern Psychotherapy in the Treatment of Post-Traumatic Stress Disorder

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Various psychotherapies for post-traumatic stress disorder and disturbances associated with it are used. The purpose of this review was to introduce of traditional and modern psychotherapy in the treatment of post-traumatic stress disorder. The data was collected by searching of online databases, English articles selected from Science Direct, PubMed, ProQuest, and Persian articles from Medlib, Magiran and SID databases and Latin books related to the subject between 2003 and 2015. Psychotherapies that were investigated in this review study were: Prolonged exposure (PE), Eye movement desensitization and reprocessing (EMDR), psychological debriefing (PD), 512 psychological intervention model (512 PIM), intranasal oxytocin strategy, accelerated resolution therapy(ART), cognitive processing therapy (CPT) and Schema Therapy (ST) derived from cognitive therapy. Often psychological intervention that their effectiveness by researchers for Post traumatic stress disorder has been examined, accompanied by limitations. For example, psychological debriefing method only short immediately after the trauma could be greater effectiveness and in our culture, especially in men tendency to be low-level debriefing. In Prolonged exposure, whether In vivo exposure or Imaginal exposure, focusing on the use of classical and operant conditioning principles to achieve extinction. But the mediating role of cognitive factors in the continuation of the disorder is overlooked. In addition, in some cases, dealing with situations that can cause trauma is difficult and high levels of anxiety and avoidance may provide. Eye movement desensitization and reprocessing due to the implementation on an individual basis, time-consuming and costly for the group therapy is limited. 512 psychological intervention model, intranasal oxytocin strategy and accelerated resolution therapy in the preliminary stages of investigation. And finally it seems that Cognitive processing therapy has great efficacy and experimental support.

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P4

Cognitive Behavioral Treatment of Post Traumatic Stress Disorder (PTSD) After a Car Accident

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Posttraumatic stress disorder (PTSD) is a common response to traumatic events. A cognitive model proposed that PTSD becomes chronic when individuals process the trauma in a way that leads to a sense of serious, current threat. The sense of threat arises as an outcome of excessively negative appraisals of the trauma and its sequel and a disturbance of autobiographical memory. Variations in the negative evaluations and the trauma memory are prevented by a series of problematic behavioral and cognitive strategies. The aim of present study is to examine the efficacy of Cognitive Behavioral Therapy (CBT) intervention following physical injury. A purposive sample of twenty volunteer participants who had car accidents were randomly assigned to experimental (n=10) and control group (n=10). All subjects were assessed using questionnaires designed to establish basic demographic information, levels of functioning and perceptions of the trauma and its impact. The Impact of Event Scale – Revised (IES-R) and Posttraumatic Diagnostic Scale (PDS) were also completed. Experimental group received eight sessions of Cognitive Behavior Therapy (CBT), included education about post-trauma reactions, relaxation training, exposure therapy with cognitive restructuring and instruction for self-directed graduated behavior practice. Pre-assessment was carried for both the group at the beginning of the intervention. Post-assessment was done for both the groups after completing CBT intervention. Third assessment was following up assessment that was done after post-assessment. As predicted by the cognitive model, useful treatment outcome was related to greater changes in dysfunctional posttraumatic cognitions. Some characteristics such as type of trauma, history of previous trauma, or time since the traumatic event was occurred were predicted treatment response. Furthermore, Type of Personality, level of educational and level of socioeconomic status were related to better outcome.

P5

The Role of Helmet in Bicycle Accidents

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Fatal injury caused by bicycle accidents in many countries. When a motor vehicle collides with a bicycle, the results are often devastating as a cyclist has minimal protection from the hard exterior of a car and it is often the cyclist who will suffer incapacitating and potentially life-threatening injuries. Vehicle drivers and passengers may suffer from broken glass injuries, whiplash and bruising. In some cases, a driver may stray in order to avoid directly colliding with a cyclist, who could lead to car colliding with a lamp post, median or tree. A fixed-object accident may lead to more serious motor vehicle accident injuries. It have been reported that all of deaths from bicycle injuries are the result of collision with motor vehicles. Although, it has been demonstrated that almost all (88%) victims of cycling accidents died in motor vehicle collisions. Unfortunately, wearing of helmet is not compulsory for cyclists in our country. In fact, none of our patients had used helmets at the time of accident. Children and adolescents comprise a great proportion of cyclists, so they are the target group for any bicycle-related injuries prevention programs. In conclusion, wearing of helmet can be very useful in the prevention of bicycle accidents.

P6

Perspective of Stem Cell Therapy for Treatment of Spinal Cord Injury

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In Worldwide, an estimated 40 cases per 1 million people reported with new spinal cord injuries each year. People with spinal cord injuries suffer from severe physical, psychological, social and economic problems. Damaged or lost cells can't be replaced when the spinal cord is injured; therefore, its function becomes disturbed permanently. Despite the significant advances in the understanding of

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spinal cord injuries (SCI), there has been limited success in treatment of SCI at the preclinical stage. Studies have shown that a transplantation of stem cells may contribute to spinal cord repair by replacement of damaged nerve cells; creating cells that will reform myelin sheath; keeping the cells from further damage at the injury site by releasing protective substances, and eliminate toxins from the environment such as free radicals to prevent the spread of damage by repressing the inflammation that can take place after injury. Different types of stem cells, from a variety of sources, including brain tissue, mucosa of nasal cavity, dental pulp, and embryonic stem cells have been studied for the treatment of spinal cord injury. Substitution of damaged neurons or oligodendrocytes is a significant goal of stem cells transplantation. Achievements in stem cells transplantation in SCI have been considerable but limited. Genetic manipulation of stem cells to over express of neural or glial markers was shown to direct differentiation to neuron or oligodendrogliocyte. Risks associated with stem cells transplantation for treatment of SCI, including the formation of tumors or abnormal circuit that leads to dysfunction should be noticed besides the benefits of this approach.

P7

Valproic Acid Mediated Neuroprotection and Neurogenesis after Acute Spinal Cord Injury

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Spinal cord injury (SCI)-induced systemic inflammatory response affects multiple organs outside the spinal cord. Treatment options for such complications are lacking. Valproic acid (VPA) is a histone deacetylase inhibitor, acting directly at the level of gene transcription by inhibiting histone deacetylation and making transcription sites more accessible. Acetylation of histones is critical to cellular inflammatory and repair processes. A recent study demonstrated that VPA has effects on neuroprotection and neurogenesis for the treatment of the injured spinal cord. VPA can decreases glial apoptosis, neruoinflammation, neurotoxicity and autophagy during the secondary injury period, and upregulates prosurvival neurotrophic factors. The neuroprotective effects of VPA are interdepend and mediated by HDAC inhibition and GSK-3 inhibition. VPA increased several stages of neurogenesis, including the proliferation of endogenous neural stem cells, neuronal differentiation and maturation, neurite outgrowth, and synaptic integration. In addition, VPA can promote neurogenesis even after spinal cord cells are damaged, by controling the expression of important transcriptional factors and the activation of multiple signaling pathways. Furthermore, the effects and mechanisms of VPA on neuronal excitation mediated neuroprotection and neurogenesis are cooperated and interconnected in treating SCI. It is necessary to optimize VPA treatment processes for SCI on aspects of therapeutic timing, effective dosage, and reliable administration route. Combinatory strategies should be established to maximize the benefits of VPA and to reduce adverse events. Specific criteria must be met prior to translating VPA treatment for SCI from animal experiments to clinical trials.

P8

NCX Family as a Neuroprotective

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In the mammalian, there are three NCX genes (NCX1, NCX2, NCX3), which their three proteins are differentially expressed in distinct regions of the central nervous system, where they might underlie different physiological and pathophysiological functions. NCX is a nine-transmembrane protein which is distributed in the brain widely. NCX operates in a bidirectional way, and exchanges Ca^{2+} and Na^{+} ions across the cell membrane in the central nervous system; thus it plays a relevant role in the maintenance of the intracellular balance of these two ions. A great number of reports have been published which studied on the effects of NCX modulation on cell damage, under anoxic conditions. The results of *in vivo* studies regard the ability of NCX activation to reduce the extent of brain infarct volume after permanent middle cerebral artery occlusion (MCAO). It is also reported that selective pharmacological blockade produced a worsening of the brain lesion, so it can be concluded that NCX antiporter plays a protective role during the events leading to brain ischemia. It is relevant to mention that after transient global ischemia in rats, NCX gene was upregulated. In the early phase of neuronal anoxic ischemia, $[Na^{+}]i$ increases in the cells, so the reverse mood of NCX operates to prevent cell swelling and death, because it contributes to a decrease in $[Na^{+}]i$ overload . On the contrary, when $[Ca^{2+}]i$ overload takes place in the later phase of neuronal anoxia, NCX forward mode of operation contributes to the lowering of $[Ca^{2+}]i$, thus protecting neurons from $[Ca^{2+}]i$-induced neurotoxicity.

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Studies show that NCX family has an impact on neuroprotection mechanism so it can be an important implication in the pathogenesis of stroke. It is hoped that novel cerebroprotective strategies may be developed for those at risk of stroke or in whom cerebral perfusion is electively reduced, perhaps at the time of surgery.

P9

Trauma and Inflammation

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One of the important reasons for death among the worldwide's population is trauma which is injury or damage to a biological organism caused by physical harm from an external source. After trauma, the immune system and the early inflammatory immune response activation lead to massive injury. Trauma causes activation of nearly all components of the immune system; it also activates the neuroendocrine system. Some endogenous immune triggers seem to have the potential to serve as novel biomarkers in predicting post-traumatic complications. Some mediators release in local tissue by accumulation of toxic by products of metabolic respiration and spillover of these mediators into the peripheral bloodstream causes extensive tissue injury. Hormones like ACTH, corticosteroids and catecholamines as well as cytokines, chemokines and alarmins perform important roles in the starting and persistence of the pro-inflammatory response after severe injury. Inflammation starts after trauma, immediately as a consequence of an efficient host defense system that is capable of sensing exogenous and pathogen-derived danger signals. Host defense system also sense endogenous, multifunctional alarm signals, and both of these two signals can initiate an inflammatory response. A number of receptors are involved in the host inflammatory response, including Toll-like receptors and new family of nucleotide oligomerization domain-like receptors capable of sensing the presence of danger signals in the cytoplasm. Toll-like receptors recognize host-derived, endogenous 'damage signals' like heat shock proteins and 'alarmins' such as the nuclear protein high-mobility group box protein 1, which are presented as a result of tissue trauma. It can be concluded that when trauma occurs, some pathways trigger, that results to inflammation. The neuroendocrine system, the immune system, hormones, some important mediators and receptors contributes to inflammatory responses.

P10

Reactive Glial Cells for Brain Injury

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A common pathological process that occurred after brain injury is gliosis. Gliosis involves the activation of glial cells to proliferate and become hypertrophic to occupy the injured brain areas. In order to form a defense system against the invasion of micro-organisms and cytotoxins into surrounding tissue, glial cells including astrocytes and microglia undergo reactive response to injury. Neuroinhibitory factors were secreted by reactive glial cells, this mechanism leads to prevent neuronal growth, eventually forming glial scar inside the brain. It have been reported that reactive glial cells showed after stroke, spinal cord injury, glioma, and neurodegenerative disorders such as Alzheimer's disease. Induced pluripotent stem cells is a reprogramming adult cells into pluripotent stem cells has emerged a new promise for potential stem cell therapy. Many studies showed that mouse or human fibroblasts can be differentiated into neurons or oligodendroglial cells. It has also been demonstrated that astroglial cells can be transdifferentiated into neurons or reprogrammed into neuroblast cells. It has been reported that after brain injury, reactive glial cells including astrocyte cells can be reprogrammed into functional neurons in the adult mouse cortex. Regard to this background, direct reprogramming of reactive glial cells into functional neurons In vivo could provide an alternative approach for repair of injured brain.

P11

Children and Crossing the Road

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Children need to learn to use the roads safety. Road safety is essential for children's freedom, development and exercise. When walking near a road it is a good idea to: 1. Hold your child's hand. 2. Don't let them run ahead. 3. Look out for and encourage your child to be aware of hidden entrances or driveways crossing the pavement. 4. Put reins on a younger child if they're not strapped in a pushchair. 5. Make sure your child walks on the side of the pavement away from the traffic. 6. Never let your child goes near a road alone or even with an older child. 7. Explain that pedestrians have to wait on the pavement until all the traffic coming from both directions has stopped - only then is it safe to

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cross. 8. Tell your child not to cross where they can't see far along the road. 9. Explain that they should not try to cross a road between parked cars; drivers won't be able to see them very well and the cars might start moving. 10. Warn your child to watch for cyclists or motorcyclists who might not have seen them. 11. Make sure your child can be seen easily, for example bright or fluorescent clothes are best during the day and reflective materials work well at night. Children are generally not ready to cross roads on their own until they are at least eight years old and many will not be ready even then.

P12

Progesterone Act as Neuroprotective in Traumatic Brain Injury

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Traumatic brain injury (TBI) is one of the leading causes of death in men under the age of 35 that mostly occurs due to the road accidents. Current clinical treatments have not enough repair and prevention of secondary damage caused by cytotoxicity. Progesterone, as a primary sex hormone, acts as neuroprotection in TBI and stroke. Progesterone increases anti-oxidants and decreases inflammation factors. Furthermore it contributes in axonal remyelination, and increases synaptogenesis after TBI. This review article focused on the effect of progesterone mechanisms on inflammation factor which involved in TBI. Although, many of TBI mechanisms have not been discovered, but studies showed that this hormone can be a safe treatment for TBI and other neurodegenerative diseases.

P13

Sleepiness in Road Accidents

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Sleeping through different mechanism causes the removal of fatigue and regaining power to start daily activities. Sleep with high quality plays an essential role in body and mental health. The previous studies indicated that problems derived from sleeping can lead to the emergence of many physical and mental disorders, including lack of appetite, physical and mental tiredness, lack of concentration, nervous, behavioral, physiologic changes, the decrease in the speed of information analysis, increase in human slips and incidence, decrease in consciousness and depression and anxiety. One of the most health problems derived from driver's sleep disorders are car accidents. Sleeplessness and sleep disorder are among the most important reasons for fatal driving accidents in roads, rails and air and other work incidences. It have been reported that driving between 2 A.M. and 5 A.M. increases the danger of car accidents up to 5 times. To prevent accidents and injuries to the passengers and the huge costs (amounting to billions) derived from irreversible accidents and damages, it is vital for measures to be taken concerning improving the sleep quality among bus drivers and regular, adequate and appropriate rests, and limiting working hours of the drivers in a day. Sleep is one of important factors which can influence people's health and their social activities.

P14

Therapeutic Potential of Induced Pluripotent Stem Cells for Spinal Cord Injury

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Spinal cord injury (SCI) is a destructive event that often lead to permanent neurologic deficit. Current clinical treatments are aimed at preventing secondary damage, promoting regeneration, and replacing destroyed spinal cord tissue, although effective treatments for SCI remain limited. Cell therapies for treating SCI are promising therapy for replacing dead cells, neuroprotection and axon regeneration. A number of different pluripotent, multipotent, and differentiating stem cells have been investigated so far for the treatment of SCI. Some of these cells have entered or will soon be entering clinical trials. Basic and pre-clinical experimental studies have highlighted the positive effects of Induced pluripotent stem cells (iPSCs) treatment after spinal cord and

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peripheral nerve injury. iPSCs are a type of pluripotent stem cell that directly can be generated from adult cells and their therapeutic effects are believed to be due to their potential to differentiate into neural precursor cells, neurons, oligodendrocytes, astrocytes and neural crest cells that can act by replacing lost cells or providing environmental support. iPSCs can provide a cell source that has characteristics of embryonic stem cells. However, human iPSCs solve the ethical dilemma posed by human embryonic stem cells research. In addition, they can be sourced from autologous sources, which may decrease the risk of immune rejection.

P15

The Edema is One of the Most Significant Side Effect of Accident

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Traumatic brain injury (TBI) is one of the major causes of severe disability and death in the entire world that accidents are mentioned as main factors of it. TBI lead to primary and secondary injuries. Primary injuries are created immediately after accidents or bleeding but the secondary injuries are created by complicated process of cellular and molecular responses following primary injury and then lead to neuronal inflammation, brain edema and finally neuronal death. In fact, brain edema is one of the most common side effects of brain injuries and the presence and absence of edema and its control after injury can be one of the most significant factors in improving patients from neurological damage and can lead to long term improvement in cognitive, sensory and motor abilities in patients suffering from brain injuries.

P16

The Role of Astrocyte in Traumatic Brain Injury

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Traumatic brain injury (TBI) can be caused by a wide variety of stimuli and encompasses a large range of severities. TBI has the potential for long-term and gradually increased susceptibility for behavioral disturbances, seizure disorders or neurodegenerative disease. In the healthy central nervous system (CNS), astrocytes play important roles in preserving the homeostasis of ions, transmitters, water and blood flow that are critical for neural circuit function. Many features of astrocyte responses to CNS damage and disease have been studied. The potentially helpful or sometimes harmful effects of cellular responses to TBI such as reactive astrogliosis, are defined by a multitude of potential specific signaling events that can vary noticeably with different forms and severities of CNS insults. One mechanism could involve the activation of astrocyte mechanosensitive ion channels elicited by traumatic membrane deformation. Indeed, astrocytes express a number of mechanotransducing ion channels. Studies have showed astrocytes as critical early responders to TBI and suggest an essential role for astrocyte-derived ATP in stimulating other cellular responses. Reactive astrocytes play critical roles in post-TBI synaptic plasticity and the reorganization of neural circuits. Post-traumatic tissue repair and synaptic remodeling is improved by astrocyte, and astrogliosis to ameliorate TBI sequelae is considered.

P17

Road Safety Education for Children

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Road safety is a great subject to engage children and young people. It's a very important subject because everyone uses roads and road danger impacts on everyone. Children don't have the same ability to judge distances, speed, and noise direction. Therefore, it's really important to ensure that children have a good understanding of basic street safety when they start walking around the local and city streets without parents. Road safety education is a lifelong learning process, and educational measures need to be appropriate to the child's stage of development, starting with practical pedestrian and then cyclist skills, but increasingly involving higher-level skills to match children's increasing independence as pedestrians, cyclists and ultimately young adult drivers. All road users have a task to keep children safe, so it is also important to target drivers through training and publicity and to make parents aware of their key role in improving the safety of their children. In conclusion, parents are important

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role models for their children and can inculcate safe behavior through example, for instance in the use of seat belts and in their behavior as pedestrians.

P18

Minor Head Trauma in Children

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Head trauma is the most common form of accidental injury among children, which is a source of concern for parents and pediatricians. After head trauma, children may be loss of intellectual function. Most head trauma in children is minor and not related with brain injury or long-term outcome. However, a small number of children may have a clinically important traumatic brain injury. The incidence of neurobehavioral outcome in children who have maintained minor head injury is argumentative. Headaches were a more frequent problem in the head-trauma patients. Management has focused on limiting progression of the primary brain injury and minimizing secondary brain injury. Children who have sustained minor head trauma manifest substantial functional morbidity despite the rarity of physical outcome. This functional morbidity probably reflects parental overreaction and possibly family dysfunction. It is recommended that pediatricians who have defined that a child's head injury is mild should focus parental education on the rarity of physical outcome and the importance of the child's returning to a normal routine.

P19

Laws about Child Car Seats

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Children under 3 years of age must not travel in a car or goods vehicle (other than a taxi) unless restrained in the correct child seat. Children aged 3 years or over who are under 150 cm in height and weighing less than 36 kilograms must use the correct child seat, booster seat or booster cushion. Rearward-facing child car seats must never be used in the front passenger seat of cars with an active airbag. Children up to the age of six months must be secured in an approved rearward facing restraint. Children aged from six months old but less than four years old must be secured in either a rear or forward facing approved child restraint with an inbuilt harness. Children under four years old cannot travel in the front seat of a vehicle with two or more rows. Children aged from four years old but less than seven years old must be secured in a forward facing approved child restraint with an inbuilt harness or an approved booster seat. If your child is too small for the child restraint specified for their age, they should be kept in their current child restraint until it is safe for them to move to the next level. If your child is too large for the child restraint specified for their age, they may move to the next level of child restraint.

P20

Progesterone in TBI Treatment

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The brain edema is one of remarkable injuries after traumatic brain injuries (TBI). The common treatments for limiting edema are included mannitol, barbiturates, corticosteroids, hyperventilation and central nervous system derange. The most of these treatments for edema is problematic. For example, mannitol can be effective for the short period of time (24 hours) after brain injuries but is not appropriate for long-term treatments after TBI. Also, the application of corticosteroids such as methylprednisolone was encountered with limited treatments. On the other hand, the studies were shown that biological gender effects incidence and the result of ischemia and TBI and gender and menstruation may have an effect on animal response to experimental TBI and finally lead to progesterone development as a neuroprotective factors. Progesterone is synthesized in males and females' brain by oligodendrocytes and some neurons in equally volume. Progesterone receptors are expressed in adult brain, thus the various regions of brain are natural target of progesterone. The investigations on progesterone were shown that this hormone has been used as a treatment after injury due to stroke and TBI in males and females. Moreover, animal studies were shown that the use of progesterone after experimental TBI decreases neuronal apoptosis and limit gliosis. progesterone injection leads to decrease neuronal death, increase remyelination and improve function and overall decrease in brain edema.

P21

Is Interleukin-1 Beta Correlated with Intra Cranial Pressure after Traumatic Brain Injury?

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Traumatic brain injury is a leading cause of disability and death from injury in the world. The Interleukin-1 (IL-1) is a family of cytokines that act as key mediators of the inflammatory response peripherally and centrally. Based on many studies, researchers found that the IL-1 is the well-known molecule in relation to acute TBI in the models of both focal and diffuse injuries. The IL-1 family includes the closely related agonists IL-1α and IL-1β. Interleukin-1 beta (IL-1β) is a pro-inflammatory cytokine with a key role in the inflammatory response following TBI and studies indicate that attenuation of this cytokine improves behavioral outcomes. IL-1β is measurable in the serum or CSF of healthy individuals. Although changes in IL-1β expression in CSF and serum following injury appear to be small, attempts have been made to correlate IL-1β levels with outcome. It have been reported that in severe brain injury patients, high concentrations of IL-1β in CSF were associated with poor outcome and increased intra cranial pressure.

P22

Traumatic Brain Injury

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It has been estimated that more than 1.7 million individuals suffer a traumatic brain injury (TBI) each year. TBI causes secondary biochemical and metabolic changes which contribute to subsequent tissue damage and associated neuronal cell death. Two early and delayed events occur after TBI, which results in neurological deficits. Primary injury events include the mechanical damage that occur at the time of trauma to neurons, axons, glia and blood vessels as a result of shearing, tearing or stretching but secondary injury starts over minutes to days and even months after the initial traumatic insult and results from delayed biochemical, metabolic and cellular changes that are triggered by the primary event. Studying the secondary injury cascade could develop therapeutic window for pharmacological or other treatment to prevent progressive tissue damage and improve outcome. Processes such as depolarization, disturbances of ionic homeostasis, and release of neurotransmitters (such as excitatory amino acids), lipid degradation, mitochondrial dysfunction, and initiation of inflammatory and immune processes are some mechanisms that occur in secondary injury event. Through these events large amounts of toxic and pro-inflammatory molecules such as nitric oxide, prostaglandins, reactive oxygen and nitrogen species, and pro-inflammatory cytokines generate, which lead to lipid peroxidation, blood-brain barrier (BBB) disruption and the development of edema. Edema, phenomena that intracranial pressure increases, can contribute local hypoxia and ischemia, secondary hemorrhage and additional neuronal cell death via necrosis or apoptosis. For improving neuroprotective strategies to control and decrease subsequent injurious events after TBI, studying on acute mechanisms in secondary injury event is necessary. With studying on this process, therapeutic window could be opened against a major cause of mortality, traumatic Brain Injury.

P23

Child Safety Seat and Accident

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Child safety seat mishandle is still a concern. To prevent serious injuries and death from automotive accidents, correct use of car seats for small children is essential. Failure to use a car seat properly can contribute to serious injury or death of a child. Recent studies have shown that child safety seats can tolerate the impact of a minor crash without affecting their future performance. Fatal or disable injuries decreased by 17% when children using car seats and booster seats. Based on powerful evidence of effectiveness, the Community preventive services task force recommends car seat laws and car seat distribution plus education programs to increase restraint use and decrease injuries and deaths to child passengers. Car seat distribution plus education programs are also recommended in a more recent review for increasing restraint use.

P24

Neural Stem/Progenitor Cells Treatment for Spinal Cord Injury

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Spinal cord injury (SCI) is a devastating condition, with sudden loss of sensory, motor, and autonomic function distal to the level of trauma. The primary mechanical trauma causes necrosis, edema, hemorrhage, and vasospasm. A cascade of secondary pathophysiological mechanisms is induced, including ischemia, apoptosis, fluid and electrolyte disturbances, excitotoxicity, lipid peroxidation, production of free radicals, and an inflammatory response, resulting in further damage due to swelling and blood flow reduction. Cell therapy is a promising strategy for SCI, and preclinical models show that cell transplantation can improve some secondary events through neuroprotection and also restore lost tissue through regeneration. Neural stem/progenitor cells (NSPCs) are multipotent cells entrusted to the neural lineage that can self-renew and expanded In vitro. NSPCs are usually grown as free-floating neurospheres in serum-free medium supplemented with growth factors. It has been reported that neuronal differentiation of human fetal NSPC grafts after transplantation into the adult rat spinal cord. In addition, human fetal brain NSPCs transplanted into the contused cervical spinal cord produced significantly repair than controls.

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