The Turkish Journal of Pediatrics 2024; 66: 113-115
https://doi.org/10.24953/turkjped.2023.564

The earthquake disaster in Türkiye: a perspective on newborn evacuation and an ophthalmological approach

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On February 6, 2023, two catastrophic earthquakes with magnitudes of 7.7 and 7.6 rocked Pazarcık and Elbistan in Kahramanmaraş, Türkiye, nine hours apart. The southeast of the country has not had an earthquake of this magnitude in hundreds of years, making it the largest to ever affect Türkiye. The severe devastating effects of the disaster were experienced in 11 provinces where a state of emergency was declared: Adıyaman, Gaziantep, Kilis, Hatay, Malatya, Diyarbakır, Adana, Osmaniye, Kahramanmaraş, Şanlıurfa, and Elazığ; it was reported that the most affected ones were Hatay, Kahramanmaraş, and Gaziantep. Two weeks after the disaster, two more powerful earthquakes with magnitudes of 6.4 and 5.8 hit Türkiye. The earthquakes and aftershocks caused catastrophic damage; 9.1 million people have been directly impacted, and almost 14 million people are affected. According to the Disaster and Emergency Management Presidency, there were hundreds of thousands of injuries and over 45,000 reported deaths in Türkiye. Our province of Adana has experienced over 400 fatalities, close to 10,000 injuries, and numerous structures that have been completely or severely damaged.[1-3] Moreover, it was decided to evacuate our hospital, Çukurova University Balcalı Hospital, immediately due to the damage caused by the aftershocks that occurred on February 21.[4]

Çukurova University Balcalı Hospital is a tertiary reference and referral center for the southern and southeastern regions of the country. During this disaster, many earthquake victims and trauma patients who required surgical intervention due to blunt and penetrating eye injuries were treated in our hospital. Hatay, which has hosted many ethnic origins throughout history and has a distinguished historical richness, now hosts many Syrian refugees. In Hatay, one of the three provinces most affected by the earthquake, two hospitals were severely damaged and destroyed. Our hospital transferred 17 newborns who were treated in the neonatal intensive care units (NICU) of these two heavily damaged hospitals. While some of the babies were pulled out of the rubble, it was possible that some of them had suffered major physical traumas, such as falling out of their incubators during the earthquake, even though they were still inside. After a thorough evaluation and testing for potential fall and crush injuries, all neonates admitted to the NICU had a screening examination for premature retinopathy (ROP) because we did not have demographic information for these newborns, such as birth dates, weeks of gestation, birth weights, treatments, or indications for hospitalization.

While certain newborns, identity information was limited to their surname, others were assigned names that included the name of the hospital and the corresponding number. It has been estimated that nine of the infants whose surnames are the only information available were born to Syrian immigrant families. An additional challenge encountered during the period of the disaster was the inability to communicate with the parents of the infants, as their identity details were unknown. One possible explanation was that these babies no

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Received 7th Aug 2023, revised 22nd Jan 2023, 4th Feb 2024, accepted 4th Feb 2024.

longer had a family. A further concern was the absence of family approval for any kind of intervention, including the examination. During the disaster's acute phase, DNA testing could not be undertaken quickly to confirm the relationship of the people claiming to be the baby's family. Consequently, medical interventions and surgical procedures that were considered vital and required in circumstances posing a threat to the baby's health were carried out without obtaining consent. Following discharge from the NICU, infants were placed under the temporary protection of social services.

Out of the 17 infants referred, six were identified with ROP during the screening examinations. One newborn was diagnosed with vitreous hemorrhage in both eyes, while another case had cataracts affecting both eyes. Two patients with ROP underwent emergency laser photocoagulation. Consequently, a vitrectomy was scheduled for one eye with ROP. A lensectomy was planned for the patient with bilateral cataracts after possible infectious and metabolic causes were ruled out. However, due to our hospital's emergency evacuation as a result of the aftershock on February 21, we had to transfer all patients and preterm newborns treated at our hospital to referral centers in other provinces that were not in the area affected by the disaster. As a result, we were unable to complete the newborns' follow-up and treatment.

During this period, we painfully realized that, as a country, we were required to make certain changes. Since our country is located in an earthquake zone, all buildings, particularly hospitals, should be assessed by authorized professional organizations and built on suitable land using advanced technology, such as rail systems, to provide earthquake resistance. Hospitals, especially tertiary reference centers, which serve as the most basic shelter in case of disaster, should be constructed in an earthquake-resistant manner, and existing old structures should be renewed or strengthened. In hospital planning, floor plans for the NICU that can be easily evacuated in the event of a disaster should be designed. In NICUs, incubators must be fixed to the ground and produced in a more protective design to prevent them from moving or opening during an earthquake. Furthermore, we recognized the importance of having wristbands with identification and birth information, especially for pediatric patients, in the event of a disaster. Additionally, in the event of a crisis, a well-organized rescue team should be established, and a strategy should be developed to first evacuate newborns by a predetermined team in accordance with the hospital's floor plans. Doctors, and therefore hospitals, must continue to welcome patients and provide healthcare even in disaster situations. That means that every province, including hospitals, should have a disaster plan, with doctors, nurses, and other healthcare professionals included in the plan in a certain order. Since protecting children is our primary responsibility, we should have a separate, comprehensive plan in place. An organization that includes state institutions should be in charge of providing a safe environment and meeting their needs.

The natural disaster of the century has resulted in catastrophic losses. The loss of loved ones and the rebuilding of their lives will undoubtedly affect hundreds of thousands of people throughout the years. This short report was written as a letter to history, in memory of people who died and the babies who lost their families, so that this tragic event is never forgotten.

Author contribution

The authors confirm contribution to the paper as follows: study conception and design: PI; data collection: PI; analysis and interpretation of results: SS, EE, FC, ND draft manuscript preparation: PI. All authors reviewed the results and approved the final version of the manuscript.

Source of funding

The authors declare the study received no funding.

Conflict of interest

The authors declare that there is no conflict of interest.

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