

From subjective judgment to objective analysis – improving child abuse detection in pediatric burns in the Czech Republic

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With this letter we would like to bring attention to children who suffer burns due to suspected or confirmed abuse or neglect and the need for standardization of detection in national level.

In the Czech Republic, almost no empirical data estimating the prevalence of non-accidental burns (NAB) in children are available. Healthcare professionals working in burn departments have a unique and vital role in identifying and intervening in cases of child abuse. Suspected abuse in childhood burns is a serious concern due to its impact on the child's safety and well-being. While burns can result from various accidental causes, specific patterns and circumstances often raise concerns about potential abuse or neglect. Health care providers must stay alert when assessing burns in children, looking for signs and patterns that might indicate abuse.

According to Stone's early study, 12 features were identified as suggestive of NAB. These include multiple hematomas or scars in various stages of healing, concurrent injuries or signs of neglect, such as malnutrition, and a history of prior hospitalizations for accidental trauma. Other indicators include delays in seeking medical care, burns that appear older than the reported date of injury, and accounts inconsistent with the child's age or abilities. Additionally, red flags include claims of no witnesses to the accident, relatives other than parents bringing the child to the hospital, or at-

tributing the injury to a sibling or another child. Behavioral signs, such as excessive withdrawal, unusual politeness, or lack of crying during painful procedures, are also concerning. Specific burn patterns, like symmetrical scalds of the hands or feet (indicating forced immersion) or isolated burns of the buttocks, are particularly suggestive of abuse [1]. Further studies emphasize burns to the genital area or buttocks and a low socio-economic status as additional predictors [2,3]. Some studies also suggest that a significant proportion of children with NAB have additional injuries [4,5]. These features highlight the importance of a thorough clinical assessment to identify potential NAB and prompt appropriate intervention. When abuse is suspected, it is crucial to involve child protective services and have social workers assess the family situation. A multidisciplinary approach, including medical professionals, social workers, and law enforcement, is essential for a comprehensive evaluation and ensuring the child's safety.

Currently, there are no uniform approaches and guidelines how to determine abuse in pediatric burn patients. Without standardized protocols, subjective assessments can lead to discrepancies between actual cases of child abuse and those that are reported [6]. Although some objective tools exist, a large component of the detection of NAB remains subjective. The implementation of standardized objective tools such as

the SPUTOVAMO, SPUTOVAMO-R questionnaires has shown that screening for child abuse using screening tools is effective in increasing the number of suspected cases of child abuse [7–9]. Questionnaires represents a significant step towards improving the detection and management of child abuse, particularly in settings where burn injuries are prevalent. It provides a systematic approach to identify signs of abuse. This helps ensure that child abuse cases are not overlooked or misjudged due to subjective assessments. Overall, the SPUTOVAMO aims to enhance both the immediate response to suspected abuse and the long-term prevention of child abuse through better data collection and analysis. With a standardized tool, healthcare providers can detect abuse earlier, which is crucial for preventing further harm and ensuring the child receives appropriate support and intervention.

To enhance early detection, healthcare facilities should adopt standardized objective screening protocols that integrate both medical and social factors offering a more comprehensive view of the child's situation. By incorporating objective screening tool into clinical practice, burn departments can improve the identification of abuse, provide better support to affected children, and increase overall child protection efforts at the national level. The implementation of such measures should be a necessity for the protection and well-being of children.

Roles of the authors

Júlia Bartková – conception and design, analysis and interpretation, writing the article; Rei Ogawa – critical revision of the article.

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References

1. Stone NH., Rinaldo L., Humphrey CR., et al. Child abuse by burning. *Surg Clin North Am.* 1970, 50(6): 1419–1424.
2. Maguire S. Which injuries may indicate child abuse? *Arch Dis Child Educ Pract Ed.* 2010, 95(6): 170–177.
3. Toon MH., Maybauer DM., Arceneaux LL., et al. Children with burn injuries – assessment of trauma, neglect, violence and abuse. *J Inj Violence Res.* 2011, 3(2): 98–110.
4. Seifert D., Krohn J., Larson M., et al. Violence against children: further evidence suggesting a relationship between burns, scalds, and the additional injuries. *Int J Legal Med.* 2014, 124(1): 49–54.
5. Fagen KE., Shalaby-Rana E., Jackson AM. Frequency of skeletal injuries in children with inflicted burns. *Pediatr Radiol.* 2014, 45(3): 396–401.
6. Vazquez S., Das A., Spirollari E., et al. Patterns for child protective service referrals in a pediatric burn cohort. *Cureus.* 2024, 16(1): e51525.
7. Sittig JS., Uiterwaal CS., Moons KG., et al. Child abuse inventory at emergency rooms: CHAIN-ER rationale and design. *BMC Pediatr.* 2011, 11: 91.
8. Louwers ECFM., Korfage IJ., Affourtit MJ., et al. Accuracy of a screening instrument to identify potential child abuse in emergency departments. *Child Abuse Negl.* 2014, 38(7): 1275–1281.
9. Bousema S., Stas HG., van de Merwe MH., et al. Epidemiology and screening of intentional burns in children in a Dutch burn centre. *Burns.* 2016, 42(6): 1287–1294.

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