

Treating child burns by Pediatric Emergency Medical Centre (SMUR) Robert Debré (APHP – Public Hospital System in Paris)

Assessment of a new hydrogel bandage: BurnTec®

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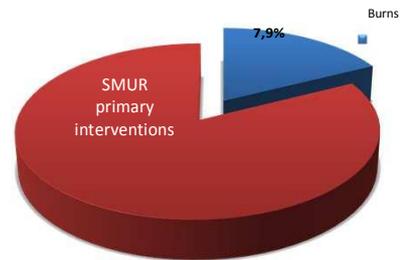
Introduction:

A burn in the case of a child is a very serious accident, children in the age bracket from 0 to 4 are the most frequent victims of burns. Children in this age group are 3 times more prone to burns than the rest of the population. In French medical centers which handle burns, 30% of patients are younger than 15 years old and 15% are younger than 2.

Hot liquids are the most frequent factor causing burns in the child age group: over 70% of burns concern infants. This percentage declines with age and is replaced by injuries caused by contact with flames. 25 to 50% burns caused by hot liquids are a result of tipping over containers with hot liquids (boiling water, coffee, tea, etc...), the rest are caused by boiling hot tap water.

Heat absorbing compresses which treat burns quickly and effectively must be used in order to reduce the progression of skin wrecking and to soothe pain. Theoretically burns are accompanied by a risk of hypothermia.

In Robert Debré Pediatric Emergency Medical Centre (SMUR) treatment of burns represent 7,9% (35/477 primary interventions in 2013).



Assessment method and material:

From September 2013 up to May 2014 an assessment of the use of a hydrogel band-aid consisting of a hardened plate of nonwoven material BurnTec® (Manufacturer: KIKGEL (Pologne) – Distributor: BioCompatible Médical solution), was carried out by (SMUR) Robert Debré Pediatric Emergency Medical Centre (APHP) on children over the age of one who suffered from a burn amounting to <20% of the body surface.

The following were evaluated:

- Necessary painkillers
- Difference in body temperature measured during primary treatment and admission to the burns unit in the hospital or in emergency (Hôpital Trousseau APHP), in order to evaluate the risk of hypothermia.
- Easy to use and take off band-aid

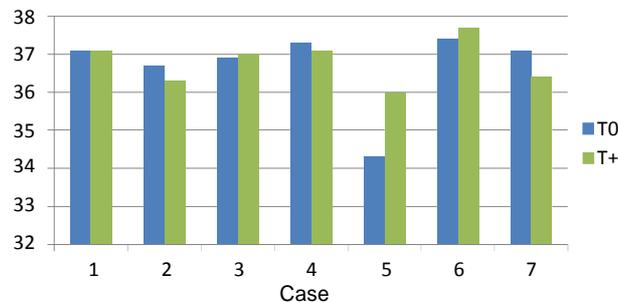
Information concerning 7 children was gathered. The cases where another band-aid was used before by another emergency unit were excluded.

DATE	N° transport	AGE (in months)	%	BURN		TO	PAIN		TEMPERATURE			
				type	Localisation		Type eval	Max	MIN	Associated painkiller	TD	T+...
01/09/2013	130896	16	10	sauce	upper limbs / left wrist / foot sole	OPS	8	1	CODEINE-MEOPA	37,1	37,1	0
13/10/2013	130984	17	2,5	central heating pipe	2 hands	EDIN	15	3	0	36,7	36,3	-0,4
11/11/2013	131096	14	7	water	thorax / neck	EVS	4	2	MEOPA-MORPHINE	36,9	37	0,1
24/11/2013	131144	36	5,5	boiling water	left leg	0	0	0	DOLIPRANE	37,3	37,1	-0,2
30/12/2013	131328	18	8,5	boiling water	thorax / shoulder / cou / joue droite	EDIN	2	0	NUBAIN/MEOPA	34,3	not indicated	
29/01/2014	140118	11	4	boiling water	arm and right forearm	Grimace scale	4	?	NUBAIN: PARACETAMOL	37,4	37,7	0,3
01/05/2014	140445	6	2	boiling water	right arm	EDIN	7	1	Saccharose / NUBAIN	37,1	36,4	-0,7

Results :

- The burns are mostly of liquid character (5 out of 6 cases)
- The TBSA (total body surface area) evaluated is 5,6 % (2%/ 10%)
- Average age 16,9 months (6 months/36 months)
- The average variation of temperature of children during transport is $-0,15\text{ }^{\circ}\text{C}$ ($-0,7/+0,3\text{ }^{\circ}\text{C}$)
- In one case a painkiller was not needed. In other cases, the painkillers used are presented in the table on the left.
- Evaluation of pain (scale according to children's' age) shows pain relief in all cases.
- The users emphasize that BurnTec bandages are easy to apply and easy to take off and do not leave any residue on the wound.

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Conclusion :

During the evaluation, BurnTec compresses did not evoke hypothermia.

In the evaluation, the use of a BurnTec compresses accompanied by a painkiller relieved pain.

Heat absorbing compresses that treat burns quickly and effectively and which ensure a coverage of the wound preventing contamination must be used in order to reduce the progression of skin wrecking and soothe pain.

BurnTec® compresses are optimal and effective for emergency treatment of child burns.

In case of burns with the surfaces > 10%, a surveillance of body temperature is necessary.

Bibliography

1 - Rigou A, Thélot B. Hospitalisations pour brûlures à partir des données du Programme de médicalisation des systèmes d'information (Hospitalisation in the case of burns based on a medicalization programme of information systems), France métropolitaine, 2009 – Synthèse. Saint-Maurice: Institut de veille sanitaire; 2011. 8 p. Available online at: <http://www.invs.sante.fr>