

Analysis of Prevalence and Characteristics of Venomous Snakebites in Croatia

Student: IVA MIHALIĆ, Milovana Kovačevića 17, 10000 Zagreb, Croatia, iva.mihalic1@gmail.com

Supervisor: Doc. dr. sc. ZORAN TADIĆ, Department of Biology, Faculty of Science, University of Zagreb, Rooseveltov trg 6, 10000 Zagreb, Croatia

Date and place: February 23rd 2011, Department of Biology, Faculty of Science, University of Zagreb

This retrospective analysis was made in order to determine level of threat venomous snakes pose to people within chosen counties and to see whether current trends in prevention and treatment of snakebites are appropriate. We obtained 61 medical release papers from hospitals “Dr. Fran Mihaljević” (Zagreb – City of Zagreb and Zagreb county) and “Dr. Josip Benčević” (Slavonski Brod – Brodsko-posavska county) taken in period from 1998 to 2008. Data was sorted based on several criteria – sex and age of the patient, location of bite, locality, time needed to get to the hospital, existence of self-administered first-aid or aid administered by a doctor prior to getting to the hospital, time spent in hospital, what might have caused the bite, types of local reaction (pain, swelling, redness), physical symptoms (hyperventilation, vertigo, nausea, sweating, feebleness, paleness, tingling, elevated temperature), psychological symptoms (fear, shock) and therapy administered in the hospital. In the initial batch of data, we’ve taken into account all cases of bites but in final analysis we used only those that were determined to be caused by snakes. To evaluate severity of snakebites we used modified Poisoning Severity Score taken from MALINA ET. AL (2010) where we excluded categories for which we couldn’t provide data.

Analysis determined that of 61 reported bites 48 were by venomous snakes - 15 by *Vipera ammodytes*, 18 by *Vipera berus* (*ssp. bosniensis*), 5 by *Vipera berus* and for 10 cases we weren’t able to determine whether it was *V. ammodytes* or *V. berus* (*ssp. bosniensis*). Majority of patients were men under forty who were probably carrying out some form of rural activity at the time of the attack. That thesis was confirmed with the fact that hands and arms were places where most bites occurred. Greatest number of snakebites took place during warm periods of year (June-August) when activities of people and snakes often overlap. Lack of unified medical procedure is visible in the fact that there were not two cases in which patients got the same treatment even if symptoms were similar and all cases (no matter how severe) were transferred to hospitals instead of remaining in the jurisdiction of a local clinic. Cases of poisoning were mostly mild with no deaths, symptoms were mostly external and there were no long-term consequences for the patients. Study showed that although snakes pose a certain threat it is by no means as big as it is sometimes proposed. There is a continual need for further education of people and medical personnel and revision of current treatment practices and/or devising new protocols.

Analiza pojavnosti i značajki ugriza zmija otrovnica u Hrvatskoj

Student: IVA MIHALIĆ, Milovana Kovačevića 17, 10000 Zagreb, Hrvatska, iva.mihalic1@gmail.com

Voditelj: Doc. dr. sc. ZORAN TADIĆ, Biološki odsjek, Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu, Rooseveltov trg 6, 10000 Zagreb, Hrvatska

Datum i mjesto: 23.02.2011., Biološki odsjek, Prirodoslovno-matematički fakultet, Sveučilište u Zagrebu

Ciljevi ove retrospektivne analize su bili određivanje razine prijetnje koju predstavljaju otrovnice u odabranim županijama i provjeriti koliko su primjereni trenutni trendovi u prevenciji i obradi zmijskih ugriza. Korišteno je 61 otpusno pismo dobiveno iz KIB “Dr. Fran Mihaljević” u iz Zagreba i opće bolnice “Dr. Josip Benčević” iz Slavenskog Broda u razdoblju od 1998. do 2008. Podaci su potom razvrstani po nekoliko kriterija – spolu i dobi pacijenta, mjestu ugriza i lokalitetu, vremenu potrebnom za hospitalizaciju, postojanju samopomoći ili liječničke pomoći prije dolaska u bolnicu, vremenu provedenom u bolnici, uzročniku ugriza, postojanju lokalne reakcije (bol, otekline, crvenilo), fizičkih simptoma (ubrzano disanje, vrtoglavica, mučnina, znojenje, tjelesna slabost, bljedilo, trnci, povišena temperatura), psiholoških simptoma (strah, šok) i oblik liječničke pomoći. U prvom koraku analize su uzeti u obzir svi ugrizi dok su u rezultatima uzeti samo oni za koje se utvrdilo da su dobiveni od zmija. Za procjenu težine ugriza koristili smo modificirani stupanj težine otrovanja (Poisoning Severity Score, MALINA I SUR. (2010.)) gdje smo isključili

kategorije za koje nismo imali podatke. Analizom je utvrđeno 61 slučaj ugriza od kojih je za 15 odgovorna vrsta *Vipera ammodytes*, za 18 *Vipera berus* (*ssp. bosniensis*), 5 *Vipera berus* a u 10 slučajeva nismo mogli odrediti o kojoj se otrovnici radi. Dob većine pacijenata je ispod 40 godina koji su se vjerojatno bavili nekim oblikom ruralne aktivnosti prije zadobivanja ozljede. Tu tezu potvrđuje činjenica da su ruke i šake najčešća mjesta ugriza. Većina ugriza je zadobivena tokom ljetnog doba godine (lipanj do kolovoza) kada se aktivnosti ljudi i zmija često preklapaju. Manjak standardizirane procedure je vidljiv se vidi u drugačijem pristupu tretiranja ugriza neovisno o sličnosti slučaja. Također su svi slučajevi bili prebačeni u bolnice iako to možda nije bilo potrebno. Slučajevi se mogu karakterizirati srednje teški sa većinom vanjskim simptomima, bez ijednog smrtnog slučaja i bez dalekosežnih posljedica po pacijenta. Time je pokazano da iako zmije predstavljaju opasnost, ona nije toliko velika kao što se ponekad predstavlja. No i dalje je potrebna dodatna edukacija ljudi i medicinskog osoblja te prilagođavanje i/ili izrada novih protokola za slučajeve ugriza.