



The Polish Genetic Database of Victims of Totalitarianisms



A. Ossowski^a, M. Kuś^{a,*}, T. Kupiec^b, M. Bykowska^c, G. Zielińska^a, M.E. Jasiński^d, A.L. March^e

^a Department of Forensic Medicine, Pomeranian Medical University in Szczecin, Szczecin, Poland

^b Institute of Forensic Research in Krakow, Krakow, Poland

^c Tadeusz Manteuffel Institute of History of the Polish Academy of Sciences, Warsaw, Poland

^d Department of Historical Studies, NTNU Norwegian University of Science and Technology, Trondheim, Norway

^e Texas Rio Grande Legal Aid, San Antonio, TX, United States

ARTICLE INFO

Article history:

Received 22 January 2015

Received in revised form 15 October 2015

Accepted 29 October 2015

Available online 30 November 2015

Keywords:

DNA

Personal identification

War graves

Exhumation

Totalitarianism

Genetic database

ABSTRACT

This paper describes the creation of the Polish Genetic Database of Victims of Totalitarianism and the first research conducted under this project. On September 28th 2012, the Pomeranian Medical University in Szczecin and the Institute of National Remembrance—Commission for Prosecution of Crimes against the Polish Nation agreed to support the creation of the Polish Genetic Database of Victims of Totalitarianism (PBGOT, www.pbgot.pl). The purpose was to employ state-of-the-art methods of forensic genetics to identify the remains of unidentified victims of Communist and Nazi totalitarian regimes. The database was designed to serve as a central repository of genetic information of the victim's DNA and that of the victim's nearest living relatives, with the goal of making a positive identification of the victim. Along the way, PGBOT encountered several challenges. First, extracting useable DNA samples from the remains of individuals who had been buried for over half a century required forensic geneticists to create special procedures and protocols. Second, obtaining genetic reference material and historical information from the victim's closest relatives was both problematic and urgent. The victim's nearest living relatives were part of a dying generation, and the opportunity to obtain the best genetic and historical information about the victims would soon die with them.

For this undertaking, PGBOT assembled a team of historians, archaeologists, forensic anthropologists, and forensic geneticists from several European research institutions. The field work was divided into five broad categories: (1) exhumation of victim remains and storing their biological material for later genetic testing; (2) researching archives and historical data for a more complete profile of those killed or missing and the families that lost them; (3) locating the victim's nearest relatives to obtain genetic reference samples (swabs), (4) entering the genetic data from both victims and family members into a common database; (5) making a conclusive, final identification of the victim.

PGBOT's first project was to identify victims of the Communist regime buried in hidden mass graves in the Powązki Military Cemetery in Warsaw. Throughout 2012 and 2013, PGBOT carried out archaeological exhumations in the Powązki Military Cemetery that resulted in the recovery of the skeletal remains of 194 victims in several mass graves. Of the 194 sets of remains, more than 50 victims have been successfully matched and identified through genetic evidence.

© 2015 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

The creation of The Polish Genetic Database of Victims of Totalitarianisms (Polska Baza Genetyczna Ofiar Totalitaryzmów—PBGOT) arose from the need to identify the anonymous victims of Nazi and Communist regimes before the first-hand historical,

family and genetic information was lost and the victim remains too degraded for genetic sampling. To this end, the Pomeranian Medical University in Szczecin and the Institute of National Remembrance—Commission for the Prosecution of Crimes Against the Polish Nation entered into a written agreement on 28th September 2012 to create the Polish Genetic Database of Victims of Totalitarianism (PBGOT). Signatories included president of the Institute of National Remembrance, and provost of the Pomeranian Medical University in Szczecin. The President of Poland, Bronisław Komorowski, wrote a letter of support encouraging the formation and research of the PBGOT.

* Corresponding author. Tel.: +48 0534095264; fax: +48 0914661568.

E-mail addresses: marta.kus1@gmail.com, forensicmedicine1978@gmail.com (M. Kuś).

Until the relatively recent advances in the science of genetics, personal identification of war victims through DNA testing had rarely been attempted. For purposes of victim identification, genetic testing consists of short tandem repeats analysis—STR and mitochondrial DNA sequencing. STR markers are most often used to identify crime victims and victims of mass disasters [1–6]. Forensic genetics basing on mitochondrial DNA analysis was first used when trying to identify Americans missing in action during the Vietnam and Korean wars [7] and then when identifying victims of 20th century armed conflicts in the aftermath of the war in Bosnia and Herzegovina, 1991–1995 [8–10]. Teams from several countries, including USA [11], Finland [12], Croatia [13], Slovenia [14], Russia [15], Poland [16] and Spain [17,18] successfully identified many of the victims through genetic testing. Texas State University and other research institutions in the United States are exploring the use of forensic genetics to identify the bodies of illegal immigrants who have perished attempting to cross the desert along the Texas–Mexico border [19].

For victims of earlier conflicts (such as WWII era) the main difficulty for forensic geneticists was extracting enough DNA of a quality suitable for STR testing. By 2013, however, techniques for extracting genetic material from skeletal remains had advanced to the point that reliable matches with tissue samples of the victim's nearest living relatives were finally possible. PBGOT sought to apply this technology to the skeletal remains of victims buried in mass graves in the Powązki Military Cemetery. The more daunting task for PBGOT was the process of locating, collecting, storing and cataloging genetic reference material from the victim's close relatives. Many of the victims died young and childless; their parents were mostly deceased and their siblings, if any, were over 80 years of age. As part of the project, PBGOT launched a media campaign asking the relatives to come forward. Added to the problem of locating their relatives was the sheer number of victims – upwards of 300. To be effective, the project necessarily had to narrow its scope and focus its resources on a smaller group of victims in a defined geographic area within the cemetery. The archaeological excavations had to be particularly exacting to avoid unnecessary disturbance to other grave sites. Through its experience with the Powązki Military Cemetery project, PBGOT has continued to refine and adapt its procedures and apply them to identify more victims of 20th century wars, armed conflicts and political repression.

PBGOT's success depends upon the initial identification of graves with particular victims and ability to locate the putative relatives, which requires institutional and governmental support as well as citizen participation. European nations that have experienced the political and social repression of totalitarian regimes are increasingly willing to confront the truth about mass killings, hidden graves, crimes of the government and the disappearance of loved ones during painful periods of national history. By creating the Polish Database of Victims of Totalitarianism, our team of forensic scientists, archaeologists, and historians continue in their efforts to bring the truth to light and into our collective social consciousness.

2. Procedures of Pbgot

To systematize and standardize the research, the entire identification process was designed to be carried out in specific stages, beginning with the exhumation and ending with genetic testing. In general terms, these operational procedures (“The Polish Genetic Database of Victims of Totalitarianisms Procedures”) correspond with the methodology for identification of victims of mass disasters conducted by Disaster Victim Identification (DVI) teams [20–22]. PBGOT's genetic testing procedures are aligned with DVI forensic methodologies used to identify the victims of

recent mass disasters. In Poland, DVI teams employed this methodology in two major disasters: the Mirosławiec airplane disaster and the Kamień Pomorski hostel fire. The Mirosławiec airplane disaster of 23.01.2008 occurred when an EADS CASA C-295 military transport plane crashed while approaching the Mirosławiec runway. The crash killed all 20 passengers and crew, including high-ranking air force officers. DVI procedures were also employed on 13.04.2009 following a fire at the Kamień Pomorski hostel for the homeless, where 23 people perished, 12 of them children.

DVI procedures designed to identify victims of mass disasters required some modifications to encompass the research and scope of the PBGOT project. To identify WWII era victims of totalitarianism, PBGOT gathered and analyzed additional data to learn, for example, whether the sequence of burials in the cemetery corresponded with the date the victims were executed. In recent years, PBGOT has refined its procedures to successfully identify hundreds of victims of Nazi and Communist regimes, employing the ISFG guidelines for forensic genetics in DVI procedures [22].

The PBGOT consists of three main elements:

1. Genetic database of reference material collected from relatives.
2. Genetic database of evidence material collected during exhumations.
3. Database of collected historical and archaeological data.

3. Victim identification workflow

PBGOT's identification procedures can be divided into 8 stages. They are shown on a flowchart (Fig. 1) and described below:

Stage A: Analysis of archives: This stage determines all the specific characteristics of the people missing. Collected data is stored in a database (authorial program called “Łowca Dusz v.1.0.”) under a bookmark “People missing”. Next, living family members are located based on historical documents and other investigation and research.

Stage B: Collecting reference material and family questionnaires: This stage involves collecting the biological material (swabs) from relatives and from the victim's personal items. There are three questionnaires: historical, medical and genetic. Key to this stage is to determine the degree of kinship between the victim and the relative. When possible, data about all the other relatives is collected, according to Budowle et al. [21]. Our goal is to attempt to obtain material from as many family members as possible. All collected data and samples are stored in PBGOT's lab. They are under control of the Inspector General for Personal Data Protection. Only chosen lab workers have an access to the samples.

Stage C: Exhumation work: The remains are exhumed immediately after uncovering. Remains from mass graves are divided as near as possible into single individuals. Each set of remains is assigned a special PBGOT number and an individual file is created for each individual victim. As the exhumation continues, additional documentation about the victim is added to the database under the individual file number. Additional documentation can include photos, burial plans, location of the graves and data about items discovered at the site.

PBGOT create a field medical laboratory to carry out the exhumations (Fig. 2). The field lab is situated under a tent that had been provisioned with various modular units to store supplies and materials. The “medical” storage unit is used for forensic medical and anthropological assessments. The “genetic” storage unit is used as a place to collect biological material and store samples for later DNA testing, including swabs of genetic material collected from the victim's relatives. The field lab is equipped with freezers to preserve the genetic material until it could be transported to the

Download English Version:

<https://daneshyari.com/en/article/95229>

Download Persian Version:

<https://daneshyari.com/article/95229>

[Daneshyari.com](https://daneshyari.com)