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Quality of life two years after severe trauma: A single centre evaluation

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ABSTRACT

Introduction: Trauma related injuries are a main cause for long-lasting morbidity and disability especially in younger patients with their productive years ahead. On a routine basis, we assessed health related quality of life two years after trauma of severely injured patients at our level-I trauma centre via posted survey.

Patients and methods: The posted survey included (1) POLO-Chart questionnaire with European Quality of Life (EuroQoL), Short Form Health Survey-36 (SF 36) and the recently developed and validated Trauma Outcome Profile (TOP) combined with (2) single centre data according to TraumaRegister DGU® data sets including trauma mechanism, injuries and initial treatment. Inclusion criteria were severely injured patients ≥18 years, treated between 2008 and 2010. Exclusion criteria were death, cognitive impairment, lack of German language and denial of participation.

Results: 129 datasets were eligible for analysis reflecting a typical trauma collective with mean age 44 years, predominantly male (67%), mean ISS 22 and 98% blunt trauma. Two years after trauma, 62% of the patients reported of relevant remaining pain and 64% of severe functional deficit in at least one body region. Sixty-four percent of the patients suffered from decreased overall quality of life (EuroQoL ≤ 0.8). Additionally, all domains of SF-36 were impaired compared to an age and gender adjusted cohort of healthy individuals, especially domains of pain and activity of daily living. These impairments were associated with decreased 'social functioning' and 'emotional role functioning'. TOP results confirmed these findings: Quality of life was decreased in almost every dimension. TOP additionally identified sequels especially in domains of "Mental Functioning" and impairments in psychological recovery including post-traumatic stress disorder, depression and anxiety. Socioeconomic impairments were frequent including further hospitalisations (62%), duration of inability to work ≥6 month (54%), financial disadvantages (45%) and work loss (26%).

Conclusion: Our results demonstrate that multiple trauma patients two years after injury suffer from impairments including persisting pain, functional deficits, mental and socioeconomic deficits. The 'Trauma Outcome Profile' instrument seems a proper tool to discover impairments in trauma patients early on and guide proper rehabilitation resources to the best of the patient.

Abbreviations: AIS, Abbreviated Injury Score; CMMC, Cologne-Merheim Medical Centre; EuroQoL, European quality of life; HRQoL, health related quality of life; ICU, intensive care unit; ISS, injury severity score; NISS, new injury severity score; POLO-Chart, POLytrauma Outcome-Chart; PTSD, post traumatic stress disorder; SF-36, Short Form Health Survey-36; SD, standard deviation; TOP, trauma Outcome Profile; TR-DGU, TraumaRegister DGU®; QoL, quality of life.

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Introduction

The main focus of the TraumaRegister DGU® (TR-DGU) is data acquisition and evaluation of trauma impact and injuries, initial treatment and hospital stay after trauma until discharge. The POLytrauma Outcome- (POLO-) Chart questionnaire is a validated tool for evaluation of long-term impairments and its socio-economic sequels after trauma [1,2]. It is considered an optional observational time point within the TR-DGU. So far however, a structured module for POLO-Chart-based assessment of late outcome including Quality of life has not been included into the TR-DGU.

Trauma related injuries are a main cause for long-lasting morbidity and disability especially in younger patients with their productive years ahead [3,4]. While trauma associated mortality has decreased over time due to improved medical care and technical development the quality of life of survivors is often not assessed. Survivors frequently suffer from long term disabilities including physical, functional, social and psychological sequels of trauma [2,5–8]. In principle, these four categories have been summarized as 'Health related Quality of Life after Trauma' (HRQoL) [5]. Mid to long term limitations may also result in altered daily life activities; return to work is often delayed or impossible [9]. Furthermore, these impairments are frequently accompanied by socioeconomic consequences [9,10].

Over the last decade the interest in quality of life assessment in trauma survivors has increased markedly [11]. The evaluation of "Quality of Life after trauma" on a routine basis has started in 2010 at the Cologne-Merheim Medical Centre (CMMC), Germany and was performed as a postal survey of severely injured patients two years after the initial impact. Within this article, we present the first results of this survey with focus on long term self reported pain and functional deficits according to the initial injury pattern. We assessed health related quality of life two years after trauma by a trauma-related HRQoL measure (POLO-Chart questionnaire) including the European Quality of Life scale (EuroQoL), the Short Form 36 (SF-36) and the recently developed and validated Trauma Outcome Profile (TOP) [1]. HRQoL measurements are subjective assessments of well-being.

Patients and methods

An analysis of prospectively collected data has been conducted including 129 data sets of severely injured patients two years after trauma to evaluate Health Related Quality of Life (HRQoL). Inclusion criteria for the present analysis were severely injured patients ≥18 years, treated at Cologne Merheim Medical Centre (CMMC) between 2008 and 2010 and documented in the TraumaRegister DGU® of the German Trauma Society (TR-DGU). For the analysis raw data of CMMC patients treated were derived from TR-DGU. Exclusion criteria from this survey were death, patients at vegetative state (defined by Glasgow Outcome Scale [GOS] Score of 2) or with serious cognitive impairment unable to answer the questionnaire (GOS of 3), lack of German language or denial of participation. Fig. 1 shows a flow chart of included datasets. 209/380 patients were eligible for this study.

The present study was approved by the ethics committee of the University of Witten/Herdecke (Ethical approval number: Nr. 20/2010) and patients' consent to participate in this study was obtained after detailed information was provided in oral and written form about the content and scope of the survey.

POLytrauma Outcome (POLO) Chart

The POLO-Chart is a modular and validated questionnaire to evaluate subjective Quality of Life with focus on trauma related long-term disabilities [1,2]. It contains (i) the European Quality of Life (EuroQoL) (ii) the SF-36 [12,13] and (iii) the newly developed Trauma Outcome Profile (TOP). The POLO-Chart and the additional questionnaire (see below) are self-reported, subjective evaluation instruments.

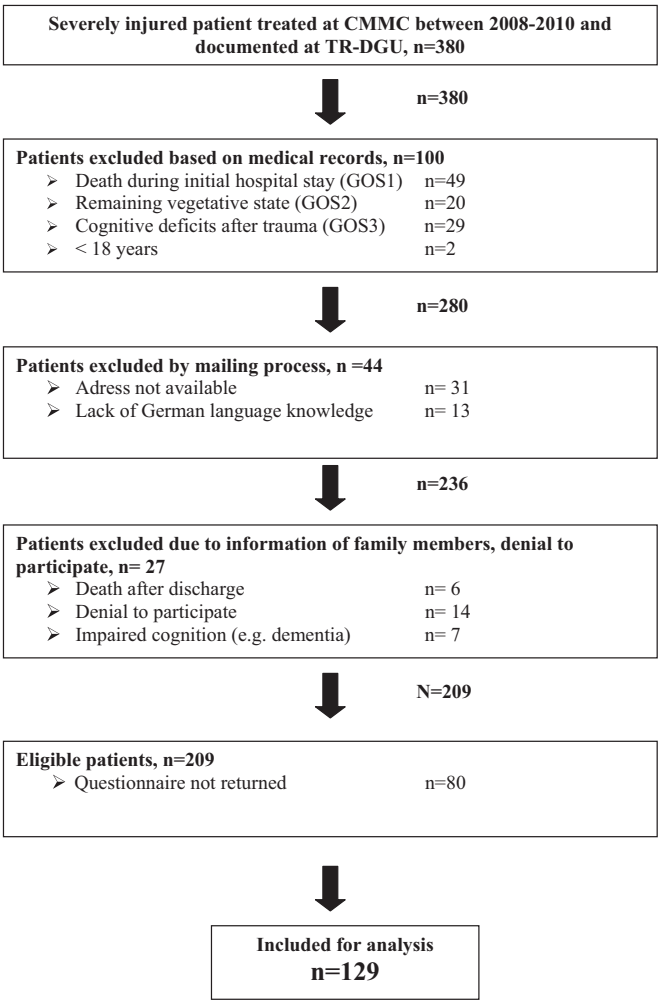

Fig. 1. Flow chart of eligible patients: 380 severely injured patients were treated at Cologne Merheim Medical Centre (CMMC) between 2008 and 2010 and documented at the TraumaRegister DGU® of the German Society for Trauma Surgery. 209 Patients were included, 129 POLO-Chart questionnaires were answered two years after trauma and eligible for analysis.

European Quality of Life (EuroQoL)

EuroQoL (modified Version October 1991: EQ-5D) is a self-rating index instrument expressing health status in a single score. It covers a visual analogue scale and five dimensions of health: mobility, self-care, activity, pain/discomfort and anxiety/depression [14,15]. EuroQoL is used as a global outcome indicator valuing health-related quality of life. It determines the presence or absence of quality of life impairing problems without detailed information on the affected domain.

Short Form Health Survey (SF-36)

SF-36 is a generic tool for health related quality of life measurement containing 36 items grouped in eight dimensions: physical function, physical role, bodily pain, mental health, emotional role, social functioning, vitality and general health