

## Response to the Letter of R. Merget, I. Feder and A. Tannapfel

The letter of Merget, Feder and Tannapfel to this publication [1] raises significant concern. In the introduction and at the end of their letter they discredit and misinterpret publications in peer-reviewed journals on the one hand<sup>1</sup> whereas they attribute this behavior to others without any evidence to support their claims.

It is positively acknowledged, that there is agreement about lack of cut-off value for fibre burden in the lung for the asbestosis diagnosis. However, this well known fact, also described in the German guideline for diagnosis and expert opinion of asbestos-related diseases [2] is not acknowledged either in expert opinions of at least some of the authors of the letter or other insurance-affiliated physicians as known from court litigation and an example mentioned in a recent publication [1]. Also statistics of the insurance affiliated so-called German Mesothelioma Registry [Deutsche Mesotheliomregister] do not support acknowledgement of this well-documented fact (see below).

The authors of the letter are inconsistent when accepting the Hit and Run Phenomenon of chrysotile on the one hand and demanding detection of asbestos bodies for the diagnosis of asbestos-related diseases on the other hand. The same is true for their questioning of the generally accepted finding that a carefully obtained qualified case history is the cornerstone of asbestos exposure [3,4]. Their cited opinion in a commentary of

Cleement et al. 2002 obviously refers to a situation where the untrained (presumably non-occupational) physician is not able to take a detailed and reliable case history from patients who are not aware in detail of their past exposures. For more information on the relevance of a qualified occupational case history see the afore mentioned publications where it is clearly stated that a qualified case history provides the best information on exposure to asbestos.

The authors of the letter ignore the cited publication of leading pneumoconiosis pathologists, namely Hammar and Abraham [5], who convincingly reject the “modification” of the asbestosis definition from CAP-NIOSH by a group of pathologists headed by V. Roggli. This “modification” proposed by Roggli et al. is not justified by scientific logic as discussed in [5], has not been validated and has not been endorsed by an independent scientific body such as NIOSH.

The authors of the letter cite the misleading statement in the Helsinki Criteria that the Roggli-Pratt modification [6] of the CAP-NIOSH definition of asbestosis [7] represents a reasonable and reproducible scheme. On the contrary, this Roggli-Pratt modification represents a restrictive new definition that is unsubstantiated by any scientific evidence. It has to be mentioned that the strong financial affiliations of V. Roggli were not disclosed when he chaired and significantly influenced the *Pathology and biomarker* chapter of the Helsinki criteria [1]; for details see below. Asbestosis grade 1 is of highly significant relevance in compensation issues because of the German medical legal definition of asbestos-related lung cancer, i.e. of the 25 fibre years threshold in cases without asbestosis or asbestos-related non-malignant pleural disorders. Contrary to what the authors of the letter assert, it is obvious from the figures mentioned in the following paragraphs of this response that non-acceptance of lung cancer as

an occupational disease is frequently due to application of this restrictive and unsound definition of asbestosis.

It should be mentioned that the so-called 1,000 fiber hypothesis, i.e. detection of 1,000 fibres per cm<sup>3</sup> of lung tissue as a prerequisite for acceptance of asbestosis grade 1 originates from the first head of the Deutsche Mesotheliomregister. It was applied by his successor and many insurance affiliates, including their lawyers [8–10].

The authors of the letter mention that they identified in about 10% of their lung tissue probes minimal asbestosis (asbestosis grade 1). According to the annual report of the Deutsche Mesotheliomregister in one year (2014) [11] in their examinations of lung tissue probes of 880 subjects with suspected asbestos-related lung cancer, they diagnosed by means of lung fibre analysis in only 69 cases asbestosis grade 1 (circa 8%). What about their expert opinion outcome of the other 92%? Was the asbestos exposure as a cause denied in all of them? See also the aforementioned non-traceable published example. Unfortunately, no detailed information is provided and no peer-reviewed publication is provided by the authors of the letter, which would allow any conclusions to be drawn on the remaining 92% of the cases. Interestingly, there is a similar relationship between lung cancer cases mainly reported by German physicians on the one hand and accepted figures by the insurance system on the other hand (in 2015 there were 4,375 reports, but only 771 accepted cases, i.e. 20%, and in 2014 respective figures were 4,343, and 834, respectively, i.e. 17.6%; [12]). According to international well-based data the figure of asbestos-related lung cancer is c. 3.5 higher than that of mesothelioma [13], which indicates that the real figure of lung cancer in Germany is to be expected in the range of 3,500 per year (more than 4 times higher than the accepted figures). It is only possible to

<sup>1</sup> Citations from their letter: “Repetitive publications of Prof. Baur and others (Woitowitz 2016) suggest that prevention and compensation of asbestos-induced diseases are counteracted by collaboration of asbestos industry, scientists with conflicts of interests, the German social accident insurance and the mesothelioma register ... his media skills help to communicate to patients and lawyers that doctors make the wrong diagnoses and betray patients with intent ... we wish to comment a few issues which represent the repeatedly published opinions of Prof. Baur, but are not common scientific knowledge”.

speculate about the influence of the afore mentioned ratio in the examinations of the Deutsche Mesotheliomregister and the respective expert opinions on these insurance decisions since no information on that matter is available. However, it is known that in 2014 there were 1,054 expert opinions (Stellungnahmen) for asbestos-related lung cancer from the Deutsche Mesotheliomregister.

Another important issue is the differential diagnosis of asbestosis and idiopathic pulmonary fibrosis (IPF). According to the annual report of the Deutsche Mesotheliomregister [11] in 2014, 4103 lung tissue probes of 218 subjects with suspected occupational disease number 4103 (asbestosis and/or asbestos-related plaques/fibrosis) were examined, but in only 25 of them (11%) asbestosis grade 1 and in 13 cases asbestosis of higher grades were diagnosed, a total of 58 out of the 218 examined cases (26.6%) were described as suffering from asbestosis and/or benign asbestos-related disorders. Again, no details are presented for the 73.4% of the group which were obviously not diagnosed as asbestosis or an asbestos-related non-malignant pleural disorder. It can be assumed, that figures of fibre analysis in lung tissue were important for these decisions because out of the total of 1,038 fibre analyses 158 did not refer to lung cancer cases.

It is true that the presence of pleural plaques favors the existence of asbestosis rather than that of IPF. However, only approximately 70% of asbestosis cases show such changes.

Since asbestosis as well as IPF may exhibit the same UIP pattern, and low counts or even absence of asbestos bodies (Abraham and Hammar found asbestos cases without detectable asbestos bodies; personal communication) do not allow reliable differential diagnosis, other aspects such as the occupational case history and the statistically likelihood according to epidemiological data have to be considered. As mentioned, asbestosis is about an order of two more frequently found in asbestos-exposed subjects than IPF [2]. This is important in decision making of the individual case since only the likelihood of the causal relationship is relevant according to the legal definition.

I'm wondering why the authors of the letter do not understand this rationale.

Regarding the dose-response relationship in lung cancer caused by asbestos the authors of the letter claim not to be aware of a dose-response relationship for compensation. Obviously they are not aware of the health-based scientific evaluation (Wissenschaftliche Begründung) of the German occupational disease number 4104 where a doubling dose for lung cancer of 25 fibre years is calculated from several studies with linear dose-response relations [14]. It should be mentioned that there is evidence for a much lower doubling dose for lung cancer, namely in the range of four fibre years [15–17].

It seems that the authors of this letter did not read in detail the work shown in references they cited, since they repeatedly misinterpreted the publications. The different focuses are already evident in the headings. For example the paper of Woitowitz [10] refers to the founding, funding and the history of the Deutsche Mesotheliomregister and its affiliation with and financial support by the German statutory accident insurance institutions (re. their HVBG/DGUV). The publications by Baur deals with social-legal aspects and scientific controversies of unsound science [1], ethical issues [18, 19], and an overview on the current worldwide tragedy and pandemic of asbestos-related diseases [20]. Of special relevance is the publication by Baur and Woitowitz [21] which presents a review on lung cancer due to occupational agents; they provide evidence that there is significant underreporting and underacknowledgement (non-compensation) of these disorders. Some of the reasons are given above.

The authors of the letter are obviously not willing to accept that scientists' or physicians' affiliation with interest groups is associated with high risk of bias. This is not only true for the tobacco and pharmaceutical industry, rather it is well known for any kind of industry, insurance or other interest group affiliation [22–30]. The authors sticking to definitions of asbestosis fibre count requirements in lung tissue by V. Roggli ignore, that his restrictive asbestosis definition criteria are not based on scientific

knowledge and that he did not disclose his severe conflict of interests when preparing and publishing these criteria (omitting his obvious COI in receiving millions of US dollars for testimonies for the asbestos industry and training of their lawyers, which is documented in several US court reports; a recent example is from the Circuit Court of the 11<sup>th</sup> Judicial Circuit Court and for Miami-Dade county, Florida, Case No.08–69204 CA 42, where it had to be disclosed that he, among others, was paid for consulting HONEYWELL INTERNATIONAL INC. a well-known defendant in asbestos cases).

It should be mentioned that this identification of shortcomings of current compensation practice is intended to initiate a broader discussion leading to changes to put in place an effective and fair compensation system, based on independent scientific evidence that is free of conflict of interest. Since scientists' and physicians' affiliations with vested interest groups such as the asbestos industry and insurance institutions have been repeatedly shown to be associated with harmful influence in social health issues and their burden on society [10, 18, 22, 23, 30, 31], there is an urgent need for independency and absence of conflict of interests in management of the individual case as well as in research and in social-political bodies in general. The ultimate aim should be timely, effective, preventive measures and fair independent compensation of victims, such as those suffering from asbestos-related diseases, based on scientific knowledge, objective soundness and legal definitions.

### Conflict of interests

*Disclosure:* As a Collegium Ramazzini fellow the undersigning author is obliged to the spirit and principles of this independent international society. Collegium Ramazzini as an international scientific society that examines critical issues in occupational and environmental health, with a view towards action to prevent disease and promote health. Within this principle,

the author declares no financial ties to any interest group in this matter.

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